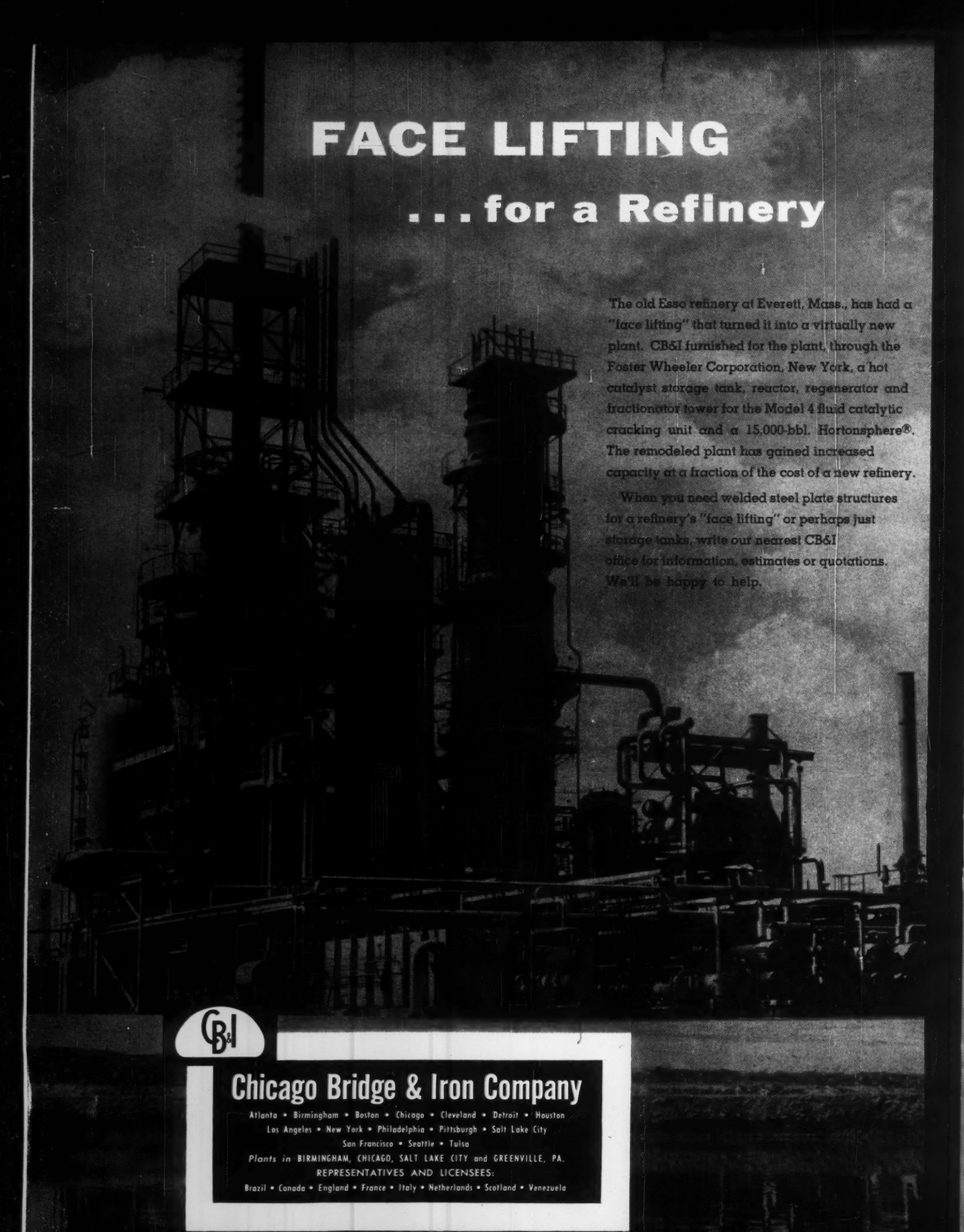
ENGINEERING NEWS-RECORD

E B POWER
UNIVERSITY MICROFILMS I
313 N 1 ST
ANN ARBOR MICH

A McGRAW-HILL PUBLICATION



FACE LIFTING

. . . for a Refinery

The old Esso refinery at Everett, Mass., has had a "face lifting" that turned it into a virtually new plant. CB&I furnished for the plant, through the Foster Wheeler Corporation, New York, a hot catalyst storage tank, reactor, regenerator and fractionator tower for the Model 4 fluid catalytic cracking unit and a 15,000-bbl. Hortonsphere®. The remodeled plant has gained increased capacity at a fraction of the cost of a new refinery.

When you need welded steel plate structures for a refinery's "face lifting" or perhaps just storage tanks, write our nearest CB&I office for information, estimates or quotations. We'll be happy to help.

CB&I

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • Tulsa

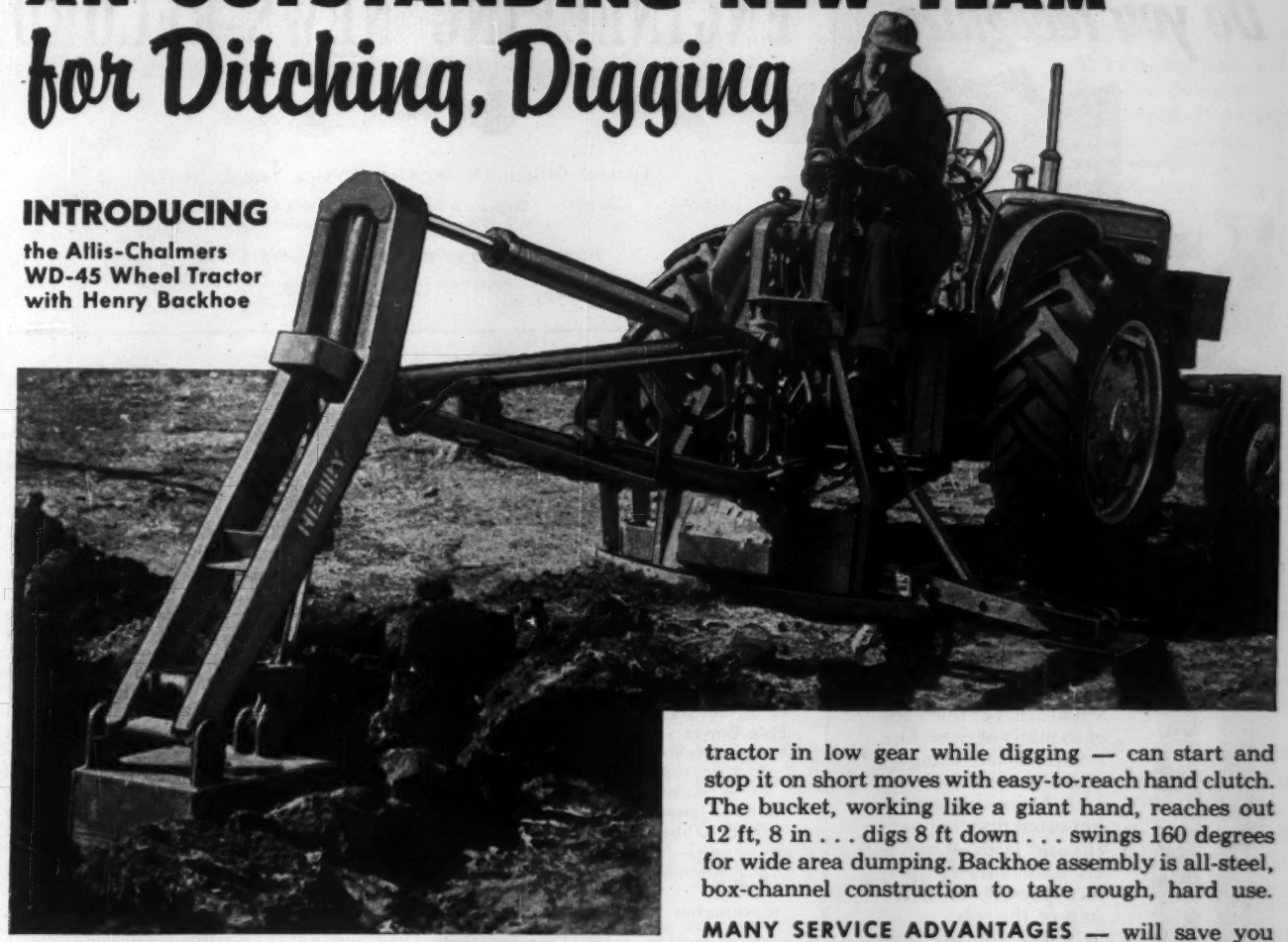
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

REPRESENTATIVES AND LICENSEES:

Brazil • Canada • England • France • Italy • Netherlands • Scotland • Venezuela

AN OUTSTANDING NEW TEAM for Ditching, Digging

INTRODUCING
the Allis-Chalmers WD-45 Wheel Tractor with Henry Backhoe



Whether it's digging ditches, trenches, culverts, footings or foundations, you'll find this team's power, mobility and versatility ideal for use on any dirt-moving job. Check the features that make this machine a big performer at low cost:

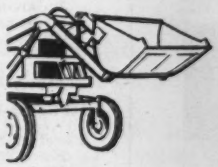
PLENTY OF POWER — for big-scale production. The WD-45 engine with POWER-CRATER design develops over 45 belt horsepower . . . to give you more power per dollar . . . more work capacity than other tractors of this type. Thousands already in use have given the WD-45 nationwide fame as a performance leader.

PLENTY OF WEIGHT — 5,325 lbs distributed right, give you the added traction and stability you need for tough, heavy digging and backfilling. It's a combination of a big, rugged wheel tractor and heavy-duty hoe to give years of continuous service.

MANY OPERATING FEATURES — let the operator do an efficient, thorough job in less time. With two-clutch control, the operator saves time because he can keep tractor in low gear while digging — can start and stop it on short moves with easy-to-reach hand clutch. The bucket, working like a giant hand, reaches out 12 ft, 8 in . . . digs 8 ft down . . . swings 160 degrees for wide area dumping. Backhoe assembly is all-steel, box-channel construction to take rough, hard use.

MANY SERVICE ADVANTAGES — will save you money. Engine features like exhaust valve rotators, removable cylinder liners, pressure lubrication give long life and lasting performance. Backhoe features, like replaceable bushings on all wear points, provide easy maintenance.

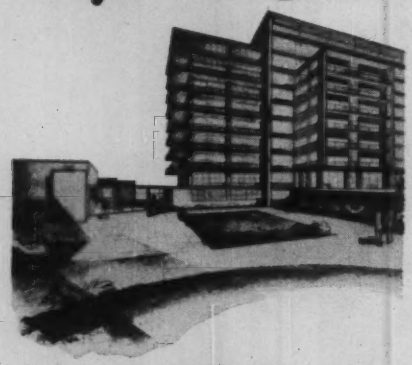
PLENTY OF VERSATILITY — keeps the WD-45 with backhoe busy all the time. The unit is mobile enough to reach any job, especially the hard-to-get-to places. With power-shift rear wheels, the tread can be adjusted in less than five minutes when extra stability is needed. Choose from six interchangeable buckets, 16 to 24-inch widths. Front-end loader and backfill blade attachments are available as optional equipment.



See the world-famous WD-45 with Henry Backhoe at your Allis-Chalmers industrial dealer, or write direct to the company for literature.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

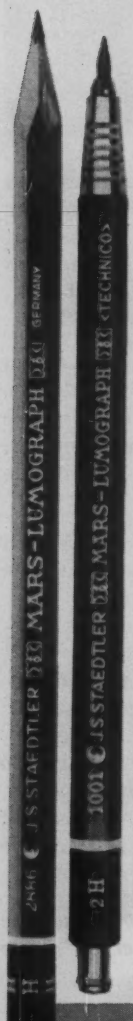
Do you recognize



this renderer's technique?

The pencil technique of a top flight renderer is as distinctively and individually his as his signature. Yet the work of so many of these fine artists has one thing in common — it is done with Mars-Lumograph imported drawing pencils and leads. Renderers find Mars the perfect pencil for every step of the job.

Whether you are rendering, detailing, or making working drawings, get the imported Mars-Lumograph or the Mars-Technico push-button lead holder and drawing leads. You'll be glad you did.



The late Albert Loecher who executed above rendering of U.S. Veterans Hospital, Wilkes-Barre, Pa. Kelly & Gruzen, Arch's.

The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H—$1.50 per dozen—less in quantity. The 1001 Mars-Technico push-button lead holder — $1.50 each — less in quantity. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H—$1.20 per dozen—less in quantity.

J.S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY
at all good engineering and drawing material suppliers

ENGINEERING NEWS-RECORD

ABP Member ABC

Editorial Offices, 330 W. 42nd St., New York 36, N. Y.

Telephones: New York - LOngacre 4-3000; Chicago - MOhawk 4-5800; San Francisco DOuglas 2-4600; Washington - REpublic 7-6630

Number of copies of this issue printed 67,633

CONTENTS ON PAGE 17

Waldo G. Bowman
Editor

E. E. Halmos, Jr. — *Managing Editor*
J. J. Christie — *Asst. Managing Editor*
V. T. Boughton — *Transportation, Power*
F. S. Merritt — *Architectural, Structural*
S. C. Jensen — *Materials and Equipment*
A. J. Fox, Jr. — *Hydraulic, Water Supply, Sanitation*
Ross Hazeltine — *National Affairs*
J. P. Chamberlain — *Business and Finance*
J. R. Owen — *Municipal*
C. J. Harding — *Labor, Men and Jobs*
J. R. Carr — *Midwest (Chicago)*
L. L. Wise — *West (San Francisco)*
N. A. Bowers — *Consultant (San Francisco)*
Elsie Eeaves — *Business News Department*
J. H. Webber — *Economics*
J. A. Mahoney, M. Wetzel — *Construction Reports*
M. W. Roessler, E. R. Huber, M. J. Martin — *Statistics, Costs, Prices*
M. V. Leggiero — *Layout & Makeup*
D. E. O'Shea — *Production*
B. J. Lamb — *Rewrite*
J. C. Greenough — *Printing*

Washington News Bureau, Room 1189 National Press Building; G. B. Bryant, Jr., *Manager*, Glen Bayless, A. E. Adams, Jay Flocken, Boyd France, William Gilmour, Sam Justice, D. O. Loomis, Gladys Montgomery, A. L. Moore, William Olcott, M. A. Reichek, Caroline Robertson, J. T. Skelly, V. B. Smith.

Domestic News Bureaus: Atlanta, 1321 Rhodes-Haverty Bldg., W. A. Kearns; **Cleveland,** 1510 Hanna Bldg., R. A. Cochran; **Detroit,** 856 Penobscot Bldg., J. C. Jones, Jr.; **Houston,** 1303 Prudential Bldg., J. A. Lee; **San Francisco,** 68 Post Street, M. C. Ralston; **Los Angeles,** 1111 Wilshire Blvd., John Shinn; **Seattle,** 6040 Fifth Ave., N.E., Ray Bloomberg.

Correspondents: Albany, Albuquerque, Augusta, Me., Austin, Boston, Boulder, Baltimore, Birmingham, Bismarck, Charleston (W. Va.), Charleston (S. C.), Columbus, Cincinnati, Cleveland, Chicago, Cheyenne, Dallas, Denver, Detroit, Durham, Harrisburg, Helena, Houston, Hartford, Indianapolis, Jackson, Miss., Jacksonville, Jefferson City, Kansas City (Mo.), Lansing, Lincoln, Little Rock, Miami, Memphis, Minneapolis, Montgomery, Milwaukee, New Orleans, Norfolk, Omaha, Oklahoma City, Philadelphia, Pittsburgh, Portland (Ore.), Providence, Phoenix, Pierre, St. Louis, Schenectady, Syracuse, St. Paul, Seattle, Salt Lake City, Spokane, Topeka, Trenton, Wilmington. **Canada:** Montreal, Toronto, Ottawa, Victoria, Regina.

McGraw-Hill Economics Department: Dexter M. Keezer, director; W. H. Chartener

Foreign News Bureaus: Editor, John Wilhelm, **New York;** G. W. Schroeder, **Bonn;** Edward W. S. Hull, **London;** John H. Kearney, **Mexico City;** John O. Coppock, **Paris;** Dan Kurzman, **Tokyo;** Peter Weaver, **Rio de Janiero;** Gordon Graham, **Bombay. Correspondents:** Amsterdam, Athens, Bangkok, Bogota, Brussels, Buenos Aires, Caracas, Copenhagen, Geneva, Havana, Helsinki, Johannesburg, Lima, Madrid, Melbourne, Oslo, Rome, Stockholm, Sydney, Tehran and 21 other principal cities and countries.

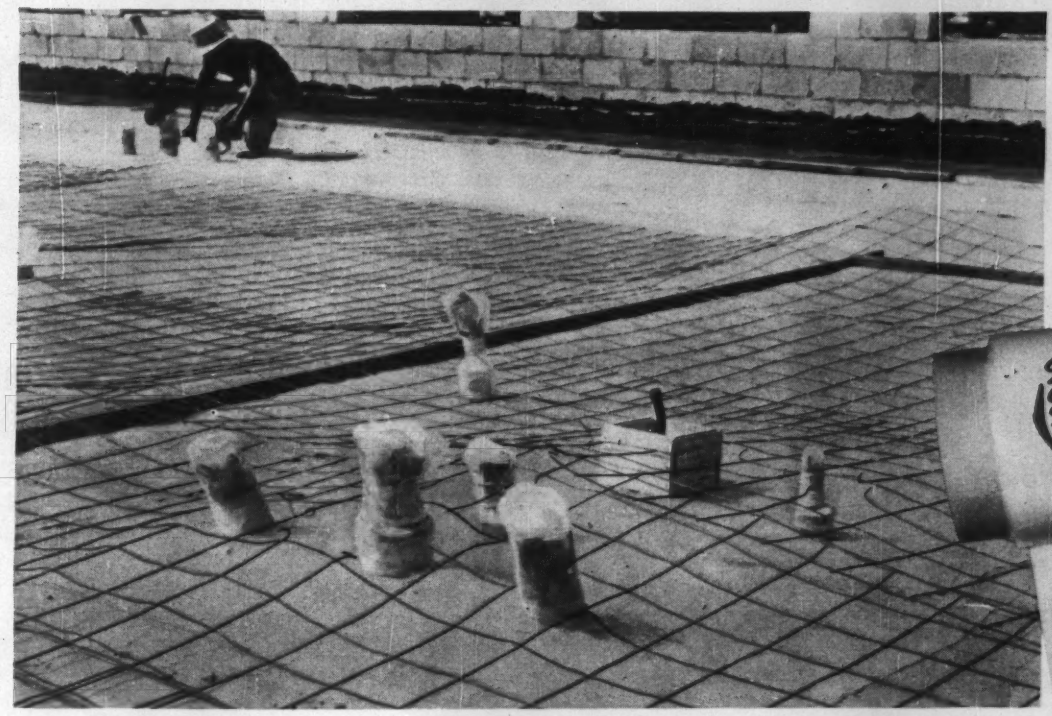
Robert F. Boger
Publisher

June 23, 1955 ENGINEERING NEWS-RECORD Vol. 154, No. 25

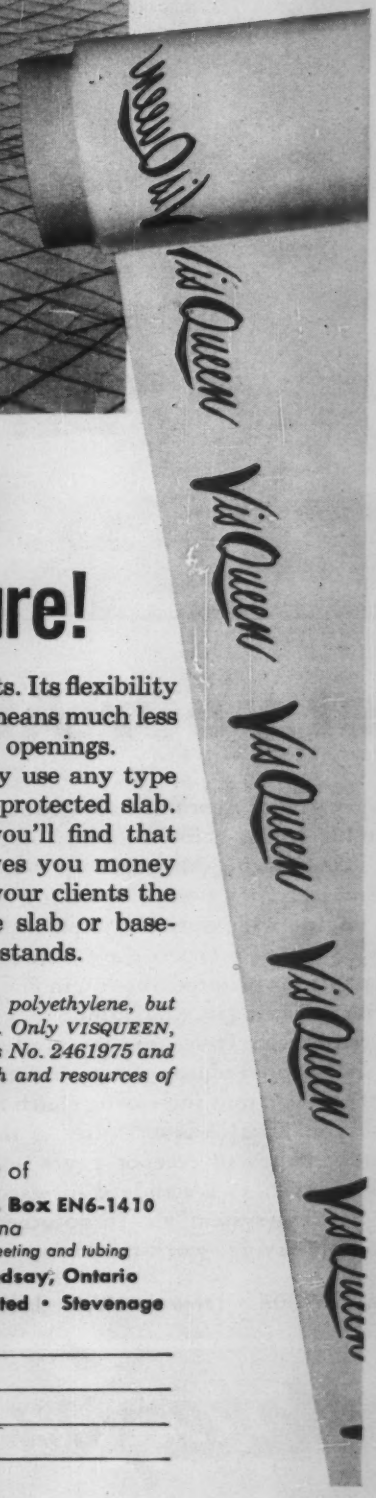
Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. **Executive, Editorial, Advertising and Subscription Offices, McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Publication Office, 99-129 North Broadway, Albany 1, N. Y. Donald C. McGraw, President; Paul Montgomery, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Circulation Director. **SUBSCRIPTIONS:** Address correspondence to Engineering News-Record—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address. Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. **Position and company connection must be indicated on subscription orders.** Single copies 35¢. Subscription rates—United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere and the Philippines, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $20.00 a year; $30.00 for two years; $40.00 for three years. Entered as second class matter October 29, 1936, at the Post Office at Albany, N. Y. under Act of Mar. 3, 1879. Printed in U. S. A.

Copyright 1955 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.



VISQUEEN film is laid directly on a smooth bed. Plumbing pipes and conduits are protected by VISQUEEN before concrete is poured.



SEALED against moisture for the life of the structure!

Many moisture barriers are far from permanent. They may crack, deteriorate, disintegrate entirely in a very few years, let through gallons of water daily to penetrate the concrete.

Not so with VISQUEEN film. It is unaffected by acids or alkalis, bacteria or mould. It will not crack or shatter even at 70 degrees below zero. It will endure as long as the concrete it protects.

Moreover, the low price and *in place* cost of VISQUEEN film will amaze you. It is light and easy to handle. (1000 square feet of 4 mil weighs less than 20 pounds.) Twenty-foot widths, available only in VISQUEEN, mean quicker laying, fewer lap joints. Its flexibility at *all* outdoor temperatures means much less time spent with corners and openings.

In addition, you can safely use any type of flooring over a VISQUEEN-protected slab.

With all its advantages you'll find that VISQUEEN film actually saves you money wherever you use it—gives your clients the assurance of a moisture-free slab or basement as long as the building stands.

look for this name on the moisture barrier you install!..

VisQueen®

For information about VISQUEEN and names of distributors serving you, clip coupon, attach to your letterhead and mail.

important! *VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U.S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.*

VisQueen® film... a product of

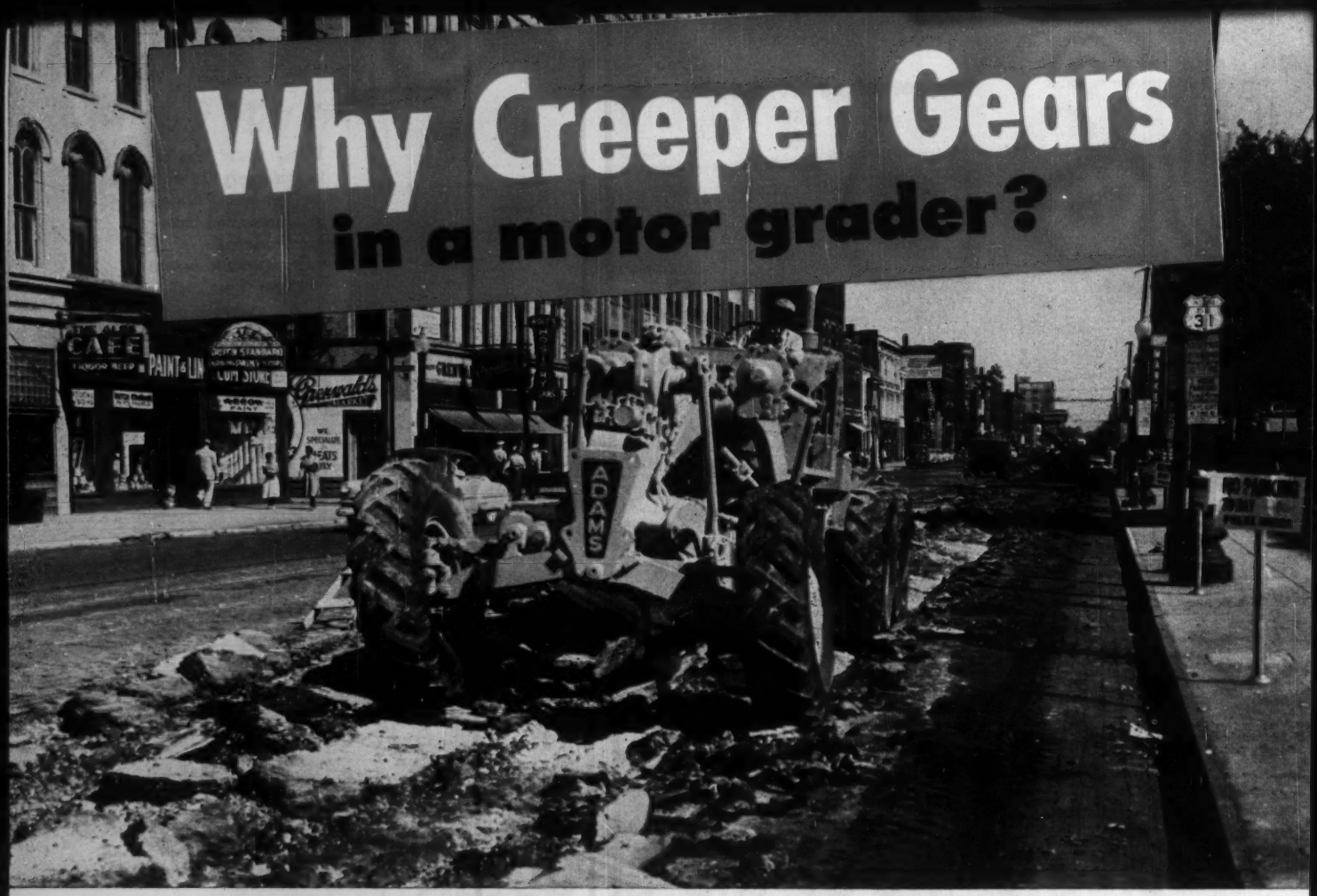
THE VISKING CORPORATION, Box EN6-1410
Plastics Division, Terre Haute, Indiana
World's largest producers of polyethylene sheeting and tubing
In Canada: VISKING Limited • Lindsay, Ontario
In England: British VISQUEEN Limited • Stevenage

Name_____

Title_____

Products_____

_____



Why Creeper Gears in a motor grader?

Let your ADAMS dealer show you!

Every grader operator has wished at times that he could slow down his grader below standard first speed without slipping his clutch or reducing his engine power. Adams creeper gears are the answer. They permit operating speeds as low as 4/10 mph with engine wide open—¼ mph with engine cut back.

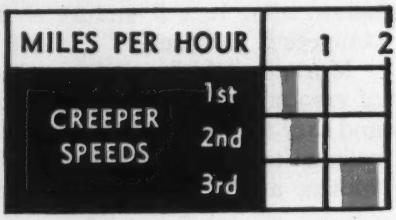
These extra-low speeds are advantageous in heavy scarifying of asphalt (as pictured above), in fine finishing, working in close quarters, grading among hidden rocks and roots, working mountain roads, etc. They gear the grader to the job. Tire slippage and shocks are reduced. They eliminate all operator tendency to slip the clutch, thus increasing clutch life.

Ask your local Adams dealer to show you a movie picturing the advantages of creeper gears and other Adams operating features—such as 8 standard forward speeds, 4 reverse speeds, dual braking system, etc. In no other graders do you get all of these time-saving, work-producing advantages.

ADAMS DIVISION • LeTourneau-Westinghouse Company, Indianapolis, Indiana

ADAMS Creeper Gears (Optional)

Provide speeds from ¼ to 1¾ mph.



Optional in new machines, Adams creeper gears are also easily installed in any Adams Motor Grader with constant-mesh transmission in the field. With them you get an effective speed range of from ¼ to 26 mph.—a correct speed for any and every grading job.

Make your next motor grader an

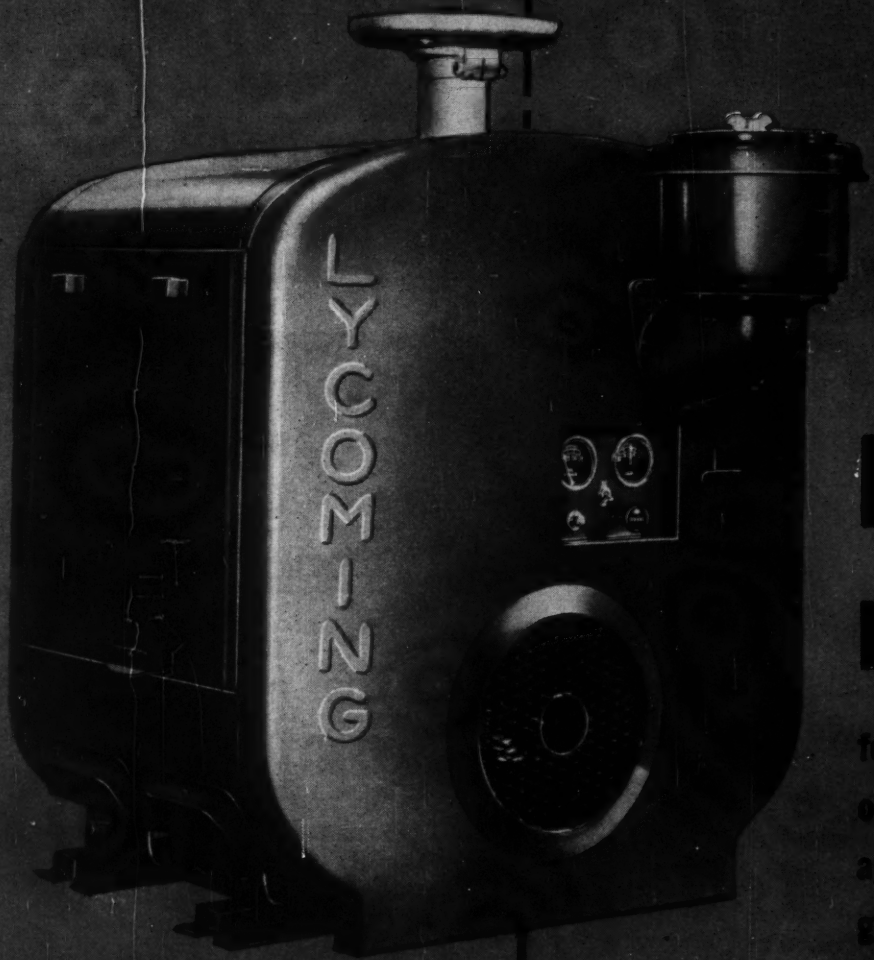
ADAMS

At last

a valve-in-head,
air-cooled engine that delivers

FULL POWER

rated at 30 h.p.! delivers 30 h.p.!



Lycoming's new C2-90

for construction field
oil and gas industry
agricultural service
general industrial use

44 years of engine-building experience for aviation, automotive and marine fields stand behind Lycoming's new C2-90. Over $1,000,000 and 5 years of time have gone into its development.

New Lycoming FULL

Now... an amazing new 30-h.p. engine

Lycoming C2-90
2-cylinder 30 h.p.

Lycoming—44 years a leading designer and producer of engines—now presents a new, advanced design industrial engine. In addition to traditional air-cooled advantages of lighter weight, lower cost, all-weather performance and superior endurance, this amazing 30-h.p. unit offers:

- FULL POWER performance—*rated* at 30 h.p.—*delivers* 30 h.p.!
- 1000 hr. continuous-duty life without overhaul.
- Highest horsepower and torque per cu. in. displacement in air-cooled field.
- Dependable operation under all weather conditions.
- Complete interchangeability—identical mounting and shaft dimensions with other major air-cooled industrial engine units in horsepower range.
- Reliability and simplicity for easy maintenance.

First of Lycoming's new family of 2- and 4-cylinder FULL POWER Air-Cooled Engines!

THE

❶ At last... a valve-in-head design that delivers ***FULL POWER***

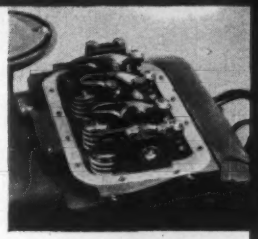
❷ At last... positive pressure lubrication, rugged construction that mean ***LESS DOWNTIME***

❸ At last... simplified design that assures ***EASY INSTALLATION AND SERVICING***

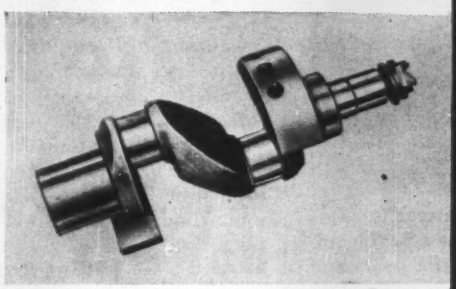
POWER air-cooled engine

with these 3 unique advantages:

FACTS

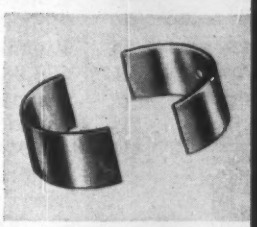


Valve-in-head design and direct valve porting result in higher efficiency . . . greater horsepower . . . improved fuel economy . . . longer engine life.



Oil pumped continuously under pressure to all moving parts. Result: less wear and overheating at friction points . . . longer, more trouble-free operation.

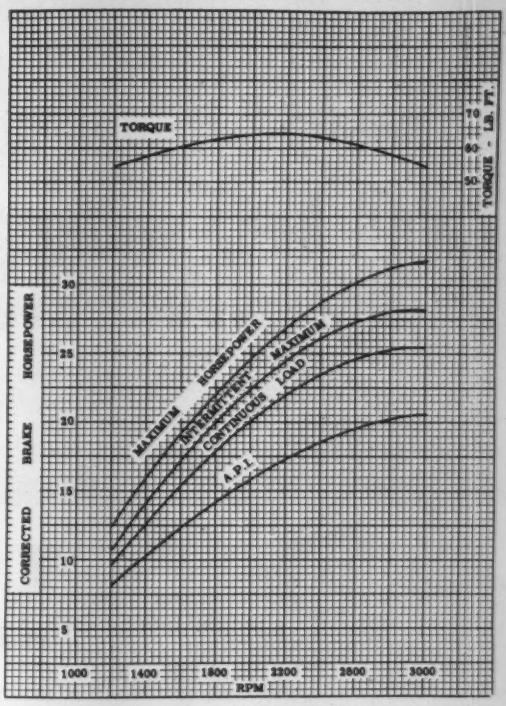
Crankshaft is extra-heavy and counterweighted. Drilled passages in crankshaft provide continuous pressure lubrication to bearings. Result: longer life.



- Readily accessible two-piece connecting rods are drop-forged, heat-treated steel . . . easy to install, remove.
- Precision-made automotive type bearings are easily replaceable . . . steel-backed . . . copper-lead lined. No cuts or grooves to break protective oil film.
- Engines have alloy valve seat inserts. Hard-faced positive type valves available—as well as hard-faced valve seats.
- Standard base allows complete interchangeability with other major air-cooled engines in its horsepower range.

THE FIGURES

compare Lycoming's FULL POWER Performance



***Find out how Lycoming's**

FULL POWER C2-90

can be tailored to your needs at no extra charge!

Accessories mounted to your requirements:

1. Starter and generator
2. Battery ignition
3. Industrial clutches & reductions (Special crankshaft extensions available)

FOR FULL DETAILS WRITE TO:

DIRECTOR OF SALES ENGINEERING, INDUSTRIAL ENGINES
Lycoming Division, Avco Manufacturing Corporation, Williamsport, Pa.

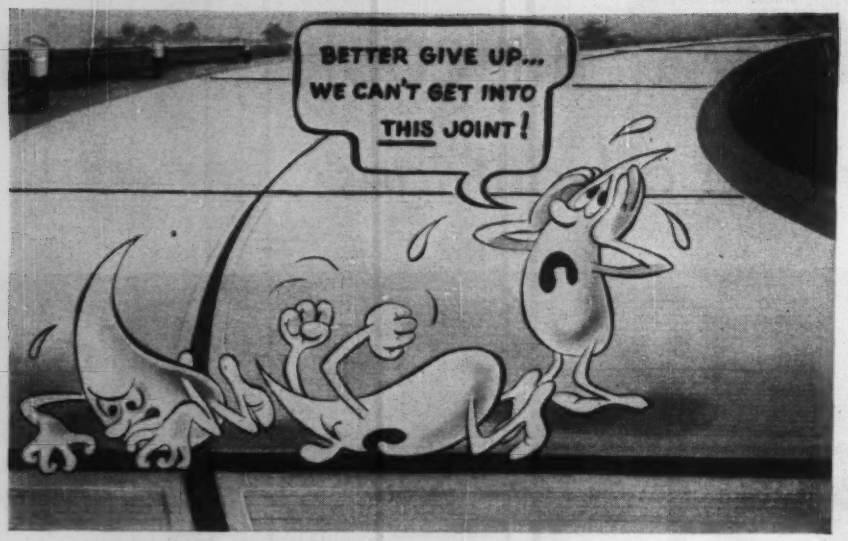
FOR RESEARCH · FOR PRECISION PRODUCTION

LOOK TO Lycoming

DIVISION OF AVCO STRATFORD, CONN.
Manufacturing plants in Stratford, Conn., and Williamsport, Pa.

A member of Avco Defense and Industrial Products organization

DISTRIBUTOR INQUIRIES INVITED



*Seal joints with FLINTSEAL**

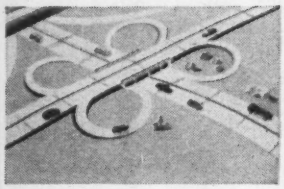
...and keep water from getting under your pavements!

Count on this popular rubber-asphalt compound to keep your concrete road joints free from costly water seepage. Year after year. Without re-pouring.

Flintseal stays extensible and compressible through all weather . . . through expansion and contraction of slabs. It won't crack in cold . . . won't flow in heat. Bonds firmly . . . to keep water and dirt out of joints.

Flintseal (hot-poured), Flintseal JFR (jet-fuel-resistant) and Flintkote Cold Poured Sealers meet state and federal specifications. Accept nothing less than these rubber bearing joint-sealing compounds for positive long-lasting sealing, and economical maintenance.

Ask for literature and application data for roads, streets and airfields.



You find Flintseal is *super* for super-highways. One application lasts for years and years.

Flintseal bonds to joint walls perfectly. Keeps pavement maintenance costs down.

FLINTKOTE

THE FLINTKOTE COMPANY, INDUSTRIAL PRODUCTS DIVISION
30 Rockefeller Plaza, New York 20, N. Y.

BOSTON • CHICAGO HEIGHTS • DETROIT • LOS ANGELES • NEW ORLEANS • PHILADELPHIA

In Toronto, Ontario: THE FLINTKOTE COMPANY OF CANADA, LTD.
In London, England: Industrial Asphalts Company, Ltd.

*REG. U. S. PAT. OFF.

READER COMMENT

Inter-American Highway

SIR: On p. 160 of the March 10 issue of your most interesting magazine, you ran an editorial under the headline "An Overrated Highway."

Even if his editorial stands good in some of its statements, it appears as if the author lays the main interest of the Inter-American Highway upon its strategic value for the Panama Canal defense.

As we people in Latin America and some of your own countrymen have entirely a different opinion, we are indulging ourselves in sending you a copy of Romulo O'Farrill's statement issued May 31 to the Mexican metropolitan press.

Mr. O'Farrill is a most outstanding businessman, who enjoys an excellent and most distinguished reputation not only in our country but practically all over Latin America, the U. S. and some European countries ever since he has devoted a good score of years to the road construction ideal, in Mexico as well as throughout the world, mainly, in Latin America. He is president of the Mexican Road Association; president of the executive committee, Pan American Highway Congresses, and vice president to the National Committee of Rural Roads. Therefore his opinion in such a matter as the necessity of terminating the Inter-American Highway is worth some thought and a good deal of consideration.

J. RODRIGUEZ ESTRADA,
Editor, "Mas Caminos,"
Mexico City, Mexico

Extracts from statement by Romulo O'Farrill, President, Mexican Highway Association

"The news of the House of Representatives of the Congress of the United States rejecting President Eisenhower's proposal to appropriate $74,980,000 as the United States share for the completion of the Inter-American Highway in a three-year period has shaken Latin American public opinion. President Eisenhower's identical letters of April 1 to the Vice President and the Speaker of the House present such sound and logical reasons to sustain the proposition from an economic, social and political viewpoint, that it was taken for granted the project would be adopted.

"To this conviction, certain facts worth considering must be added:

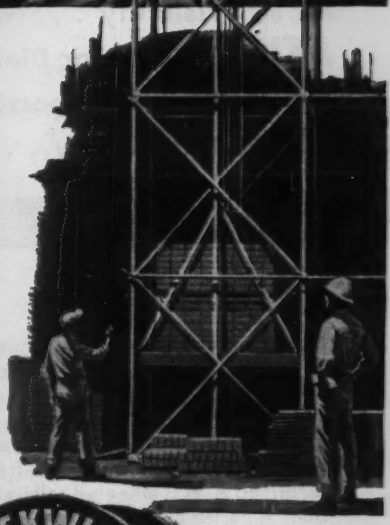
(*Continued on page 12*)

MUSCLES OF STEEL
took the load off his back

Sweat and a strong back just aren't enough when it comes to meeting the stepped-up demands of modern construction work. Today's contractors and builders call on *muscles of steel*—sturdy wire rope—to lift and carry their heavy loads.

Supplying these *muscles of steel* to the giant that is American industry is our big job here at Wickwire—a job that has commanded our vigilant care and painstaking quality control for over half a century.

In the mines and the quarries. In the logging camps and the oil fields. On construction and highway projects. With the fishing fleets and in materials handling. Wherever wire rope is used, Wickwire Rope has earned an outstanding reputation for efficiency, utmost safety, long economical service and unfailing reliability.



***every* industry benefits from wire rope**

WICKWIRE ROPE

CF&I PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2487

THE COLORADO FUEL AND IRON CORPORATION—Denver • Houston • Pueblo • Salt Lake City
PACIFIC COAST DIVISION—Los Angeles • Oakland • Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Buffalo • Chattanooga • Chicago • Detroit • New Orleans • New York • Philadelphia

COMPLET

3-WHEELED ROLLERS

NEW **Torque Converter Drive** . . . smooth, powerful
NEW **Variable Weight** . . . water or wet sand ballast
NEW **Visibility** . . . with low center of gravity, and high ground clearance
NEW **Gasoline or Diesel Engines** . . . 2-speed or 4-speed transmissions
NEW **Torque Proportioning Differential** . . . maintains traction under difficult conditions
NEW **Accessibility** . . . servicing all assemblies is quick and easy

No. 1 feature of this brand new line of 3-wheeled rollers is Torque Converter Drive which controls power automatically, increases the life of power unit and clutches, cushions the reversing action, and provides an infinite number of speeds. In every detail, these machines are engineered and constructed to provide the superb, trouble-free performance that has characterized A-W 3-wheeled rollers through the years since Austin built America's first motor road roller in 1907. Made in 5-7, 6-8, 7-10, 8-11, 10-12 and 12-14 ton sizes.

Austin-Western

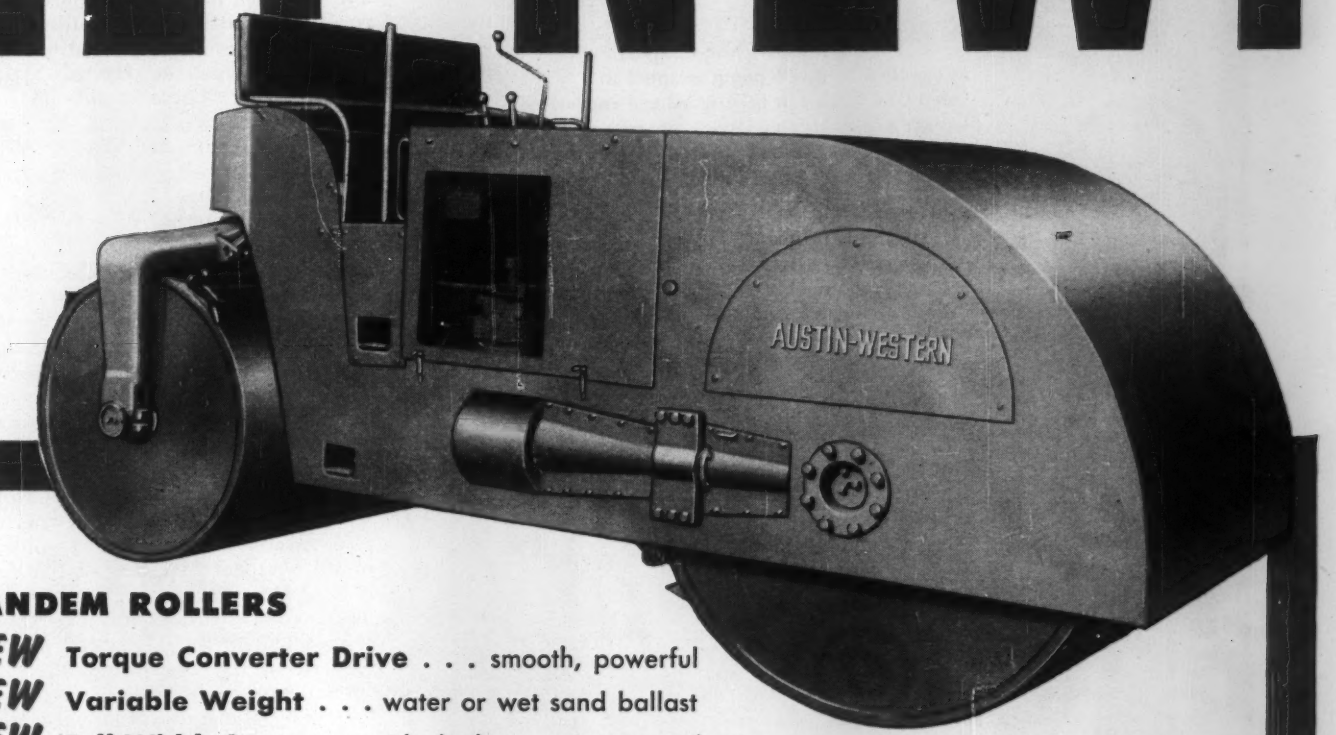
Power Graders · Motor Sweepers
Road Rollers · Hydraulic Cranes

BALDWIN · BLH · LIMA-HAMILTON

Construction Equipment Division

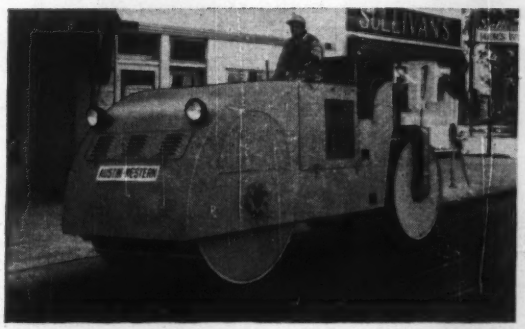
Manufactured by
AUSTIN-WESTERN COMPANY
Subsidiary of Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.

ELY NEW!



TANDEM ROLLERS

NEW **Torque Converter Drive** . . . smooth, powerful
NEW **Variable Weight** . . . water or wet sand ballast
NEW **Full-Width Seat** . . . with dual operating controls
NEW **Visibility** . . . with low center of gravity, and high ground clearance
NEW **Gasoline or Diesel Engines** . . . 2-speed or 4-speed transmissions
NEW **Accessibility** . . . servicing all assemblies is quick and easy



While the Torque Converter Drive described on the opposite page is probably their most important feature, this new line of tandem rollers incorporates many other refinements designed to provide exceptionally smooth performance on precision jobs. Modern industrial engines furnish a smooth flow of steady power; uniform weight distribution eliminates side sway; effortless hydraulic power is used for steering . . . such features are your assurance of dependable, low-cost service. Available in 5-8, 8-12 and 10-14 ton sizes.

Get all the Facts ...

AUSTIN-WESTERN COMPANY
615 Farnsworth Avenue, Aurora, Illinois
Please send complete information and literature on Austin-Western Rollers.

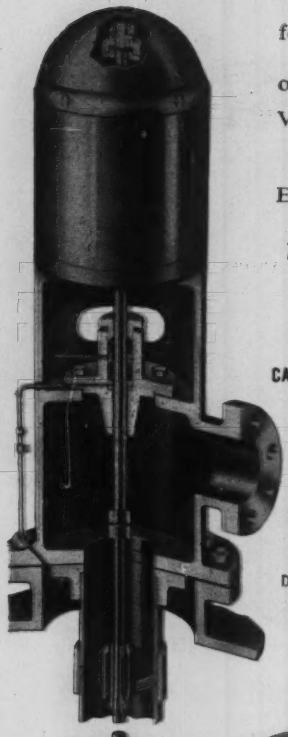
Name .....
Title .....
Company .....
Street .....
City .....

Verti-Line
CLOSE-COUPLED PUMPS
for every Industrial Vertical Pump Installation

The Verti-Line Close-Coupled Pump is not just another deepwell pump adapted to industrial service. It is designed and engineered for such jobs as booster service, fire protection, cooling, transfer and general service pumping of water and other fluids, corrosive or non-corrosive.

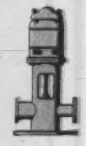
Verti-Line Pumps are made to the highest standards of quality in workmanship and materials to assure a *precision built* product. Each unit is thoroughly tested and rigidly inspected, insuring ease of field assembly and perfect performance—guaranteed to meet the most exacting specifications.

Whatever your vertical pump needs, investigate Verti-Line Pumps before you buy.



CAPACITIES FROM 20 GPM TO 30,000 GPM — HEADS TO 600 PSI

Heavy-Duty Fabricated Discharge Head With Solid Shaft Motor

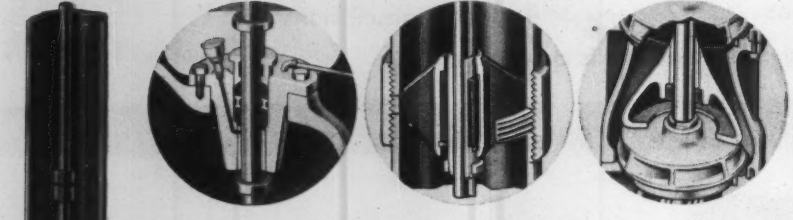


In-Line "T" Type Fabricated Discharge Head With Hollowshaft Motor

Standard Discharge Head With Combination Gear and Motor Drive

TYPICAL CONSTRUCTION FEATURES

(Open lineshaft type . . . Enclosed lineshaft also available)



The packing assembly is simple and effective. It is easily accessible and consists of a packing container, lantern ring, packing rings, pressure relief bushing, gland, fluid by-pass and lubrication fittings. Mechanical shaft seals also available.

Outstanding feature of bearing assembly is removable stainless steel shaft sleeve. This prevents shaft wear and bearing journal corrosion, and is easily replaced without special tools. You simply remove the old and slip on the new which is secured by a stainless steel collet.

Dual bowl bearings of rubber and bronze are supplied in most open and enclosed lineshaft pumps. Extra stability and resistance to abrasives mean longer life.

Send for your free copy of our new booklet, "Pumps for Sale." Ask for Bulletin E-65

Verti-Line Pumps are the exclusive products of

LAYNE & BOWLER PUMP COMPANY

general offices and main plant

2943 VAIL AVENUE • LOS ANGELES 22, CALIFORNIA

READER COMMENT

"U. S. expenditures on the Inter-American Highway are not a gift, but a sound investment. Inasmuch as most of the United States highway dollar in Latin America goes back home in equipment and machinery purchases, not only on items bought for road construction itself, but on thousands of commodities imported. Latin America has become the United States' best customer. These imports increase as highways are extended, for road nets provide indispensable means for developing agriculture, industry, trade and tourism.

"The slow rhythm of construction in Central America has been the cause for failing to attain the sought-after revenues. It is then obvious that, economic-wise, the Eisenhower proposal is meant to speed up the collection of economic and political dividends expected from the highway.

"I have learned of one apparent good reason for the Congress of the United States not to pass the project: namely, that the completion in three years, as proposed under the rejected plan, would mean that $11 million would be spent in excess of the cost if built at a slower rate. Technically, this is true. However, my experience as president of the Mexican Highway Association has shown that delay in construction or too slow a rhythm is frequently the cause of duplicate expenditures. When you don't put on gravel, consolidate or pave different sections of highways in due time expenses multiply to staggering figures. At the old pace, the Inter-American Highway will take another ten or fifteen years to be completed. Who can predict what construction costs will be, over such a long period? Who can measure the amount of political, economic and social dividends to be lost in the meantime? It needs no calculation to assert it would surpass the $11 million of apparent saving."

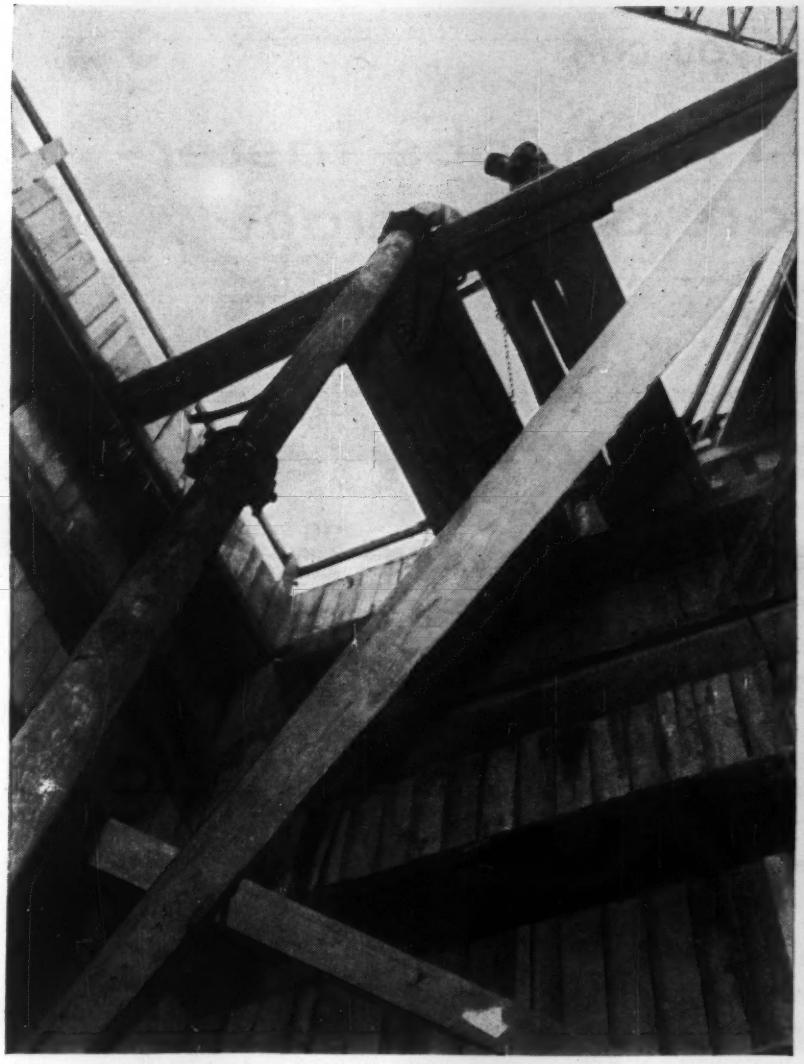
CALENDAR

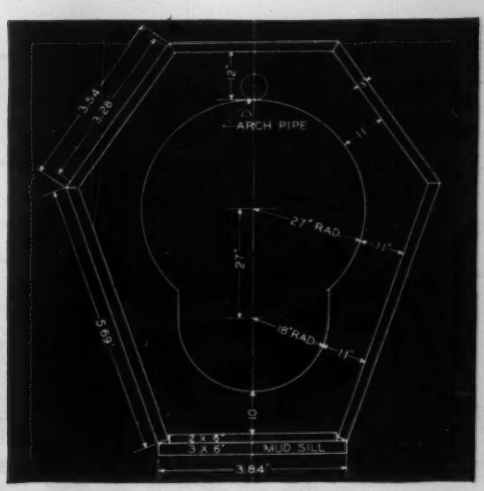
Amercian Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-July 1.

Society of American Military Engineers, Western Regional Convention, Olympic Hotel, Seattle, Wash., Aug. 18-20.

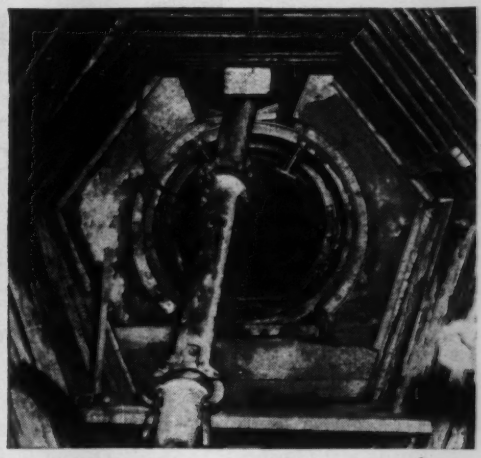
Pennsylvania Sewage and Industrial Wastes Association, annual conference, Pennsylvania State College, Aug. 22-24.

International Association for Hydraulic Research, 6th Plenary meeting, Delft, Netherlands, Aug. 29-Sept. 2.





Here you see a cross section of the tunnel showing construction and measurement details.



Pipeline was laid along bottom of tunnel to forms where it was raised to top for pouring. Note small pipe allows maximum working space in small tunnel area.

Pumpcrete® cuts preparatory and handling costs on Milwaukee sewage tunnel

Above you see the entrance shaft to a 3300-foot concrete tunnel being constructed for the Milwaukee Sewerage Commission by J. W. Lazynski, Inc., Milwaukee contractor. The concrete for this tunnel was placed by Pumpcrete, the pump that pumps concrete by pipeline.

This is how it was done:

The Pumpcrete machine, a Model 160 Single, was located on the surface near the entrance shaft where it was charged by truck mixers. The pipeline was directed down the entrance shaft and along the tunnel bottom to the forms where it was raised to the crown through 45° bends.

The 27″ radius tunnel was poured in 60-foot sections and required about one cubic yard of concrete per linear foot.

Long experience with Pumpcrete has taught the Lazynski organization the economy of placing tunnel concrete by pipeline. Pumpcrete not only packs the arch tighter, but handles the concrete faster and cuts expensive preparatory work so necessary with hand-placing methods.

See your Rex Distributor, or write CHAIN Belt Company, 4633 W. Greenfield Ave., Milwaukee 1, Wisconsin, for complete information.

Like these contractors, you can

Bid lower- Finish jobs faster- make more per contract

SPECIFY GENERAL MOTORS DIESEL POWER

In <u>all</u> your construction equipment

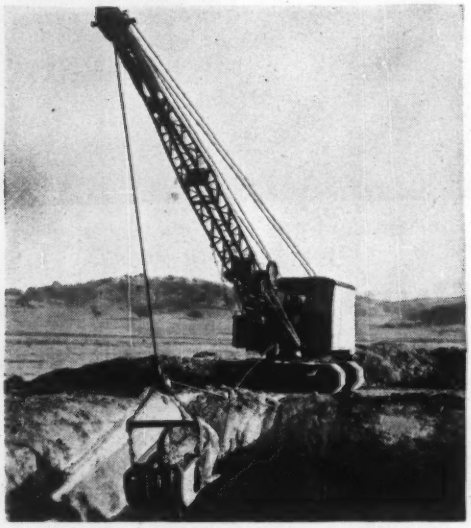
"Works faster... burns less fuel... costs less to maintain."

That's what these contractors—operating *seven* different kinds of General Motors Diesel-powered equipment—report about their GM Diesels. They've got on-the-job proof that a GM 2-cycle Diesel does more work at less cost on every construction job.

If your business is building anything from sewers to skyscrapers, you'll find a good way to build your business is to *specify* a GM Diesel when you buy equipment.

For this quick-acting 2-cycle Diesel accelerates faster under load, burns fewer gallons of low-cost fuel, stands up better even in toughest working conditions. You won't need service often but, when you do, your GM Diesel distributor backs up engine performance with fast service and quick delivery of low-cost parts, no matter where your contracts take you.

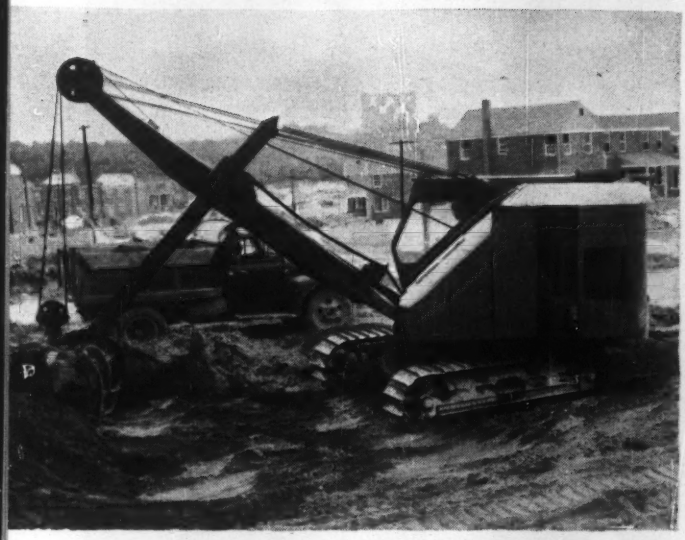
Today you can get GM Diesel power in over 750 different models of equipment built by more than 150 different manufacturers. Get their names from your local GM Diesel distributor or write direct for the list.



25% MORE WORK AT HALF THE FUEL COST

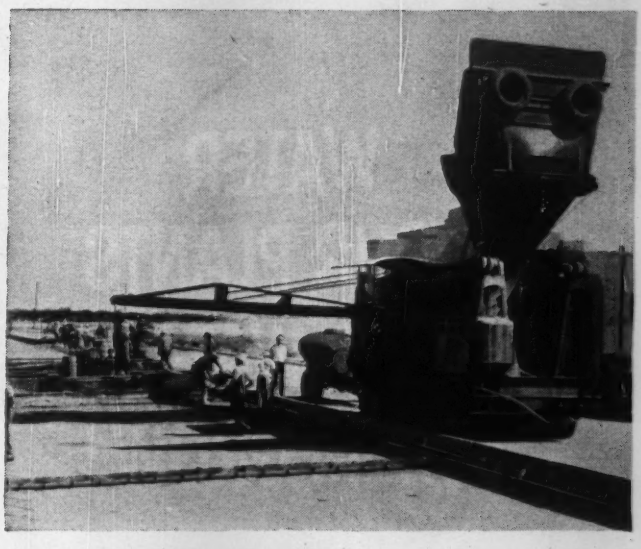
California contractors McGuire & Hester report they're getting 25% more work—and spending 50% less for fuel—since they converted this ¾-yard dragline from *gasoline to General Motors Diesel power*. The compact "4-71" GM Diesel did such a good job that the contractor repowered two more shovels with GM Diesel.

GM
GENERAL MOTORS
DIESEL POWER



WORKS ⅓ FASTER—CUT FUEL COSTS 60%

Maryland contractor Charles F. Knox, Jr., reports he gets ⅓ more production, has cut fuel costs 60%, since he converted this ¾-yard shovel from *gasoline to GM Diesel power*. The shovel works 8 to 10 hours a day, costs far less to maintain. You can specify GM Diesel power in over 50 shovel models built by more than 20 manufacturers.



PAVES 1400 FEET A DAY

This Koehring Paver, powered by a compact, quick-accelerating GM 2-cycle Diesel, lays 1400 feet of 25-foot wide pavement per day for the Austin Road Company of Dallas, Texas. You can lay pavement faster and at less cost with GM Diesel power—available as original equipment in 8 paver models made by 4 different manufacturers.

"FASTEST DITCHER IN THE AREA"

McGuire & Hester *specified* GM Diesel power in two new Buckeye Ditchers and a Lorain Crane, as well as repowering a Hough Payloader, after getting *more work at less cost* with GM Diesel power in their dragline. The master mechanic calls this GM Diesel-powered Buckeye Ditcher "fastest in the area."

NO REPAIRS IN TWO YEARS

These GM Diesel-powered LeTourneau-Westinghouse Tournapulls worked over two years in flying abrasive dust without losing a day for repairs, reports Arizona contractor Link L. Colvin. In every kind of earth-moving equipment GM Diesel power lasts longer, works faster, costs less to run and maintain.

DETROIT DIESEL ENGINE DIVISION

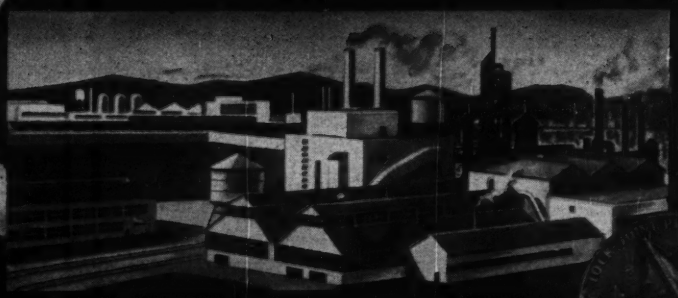
GENERAL MOTORS • DETROIT 28, MICHIGAN

Single Engines . . . 30 to 300 H.P. • Multiple Units . . . Up to 893 H.P.

WATER YOUR PLANTS AND WATCH THEM GROW!

Today, water is as basic to industrial development as it always has been to agriculture. Since thriving industry is essential to the growth and prosperity of the community, a water supply system capable of sustaining a high rate of industrial expansion is a prime concern of the community.

Such a system requires that the water supply and distribution pipelines be as efficient and indestructible as is economically possible. In pipelines 16 inches in diameter and larger, this can best be realized with LOCK JOINT CONCRETE PRESSURE PIPE.



This pipe retains its initial high carrying capacity throughout an exceptionally long life, is low in initial cost, and requires very little, if any, maintenance. More important still, its record for unfailing, trouble-free service is unexcelled

LOCK JOINT PIPE COMPANY

East Orange, New Jersey

Sales Offices: Chicago, Ill. • Columbia, S. C. • Denver, Col. • Detroit, Mich. • Hartford, Conn. • Kansas City, Mo.

Pressure • Water • Sewer • **REINFORCED CONCRETE PIPE** • Culvert • Subaqueous

ENGINEERING NEWS-RECORD

Vol. 154, No. 25 June 23, 1955

Number of copies printed this issue, 67,633

INDEX

NATIONAL AFFAIRS

Water and Power Development Hold Spotlight..... 21
Actions by ASCE Board..... 22
House Votes Construction Funds..... 23
Trusses Boost Gym's Seating Capacity..... 24
AWWA Session in Chicago Draws Record Attendance 25
State Legislatures Go Down the Home Stretch..... 26
Was It an Explosion or a Foundation Failure?..... 27
Reclamation Report Favors Federal San Luis Project. 29

FEATURES

New York's Thruway Fights Rock to the End..... 34
Island Swamp Makes Ideal Sewage Works Site..... 41
Outmoded Airbase Reconditioned for Strategic Air Command 45

NEW PRODUCTS

Portable Dredge Priced at $18,000..... 50
Horsepower Boosted on New Olivers..... 52
Plastic Paint Stops Concrete From Sticking..... 54

MEN AND JOBS

Top Army Engineers in New Assignments..... 57
AEC Names David F. Shaw to Manufacturing Post... 58
Secondary Road Authority Is Named Highway Engineer 58

BUSINESS AND FINANCE

The Longer Look: General Business Forecast..... 76
Airport Work Financed With Revenue Bond Issue.... 78
Dallas-Fort Worth Toll Bonds Snapped Up by Underwriters 78
Activity This Week 79

LABOR

Unionization of Engineers in West Coast Firms..... 80
TVA Construction Workers Go Back to School Again. 82

Reader Comment 8
Calendar 12
Washington Observer .. 19
Obituaries 55
Construction Report.... 62
Unit Prices 75
Editorials..... 96

Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Price 35¢ each copy except Annual Cost Issue. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

HIGHWAY COMMISSION OUT—The Delaware legislature has overriden a veto by Republican Gov. J. Caleb Boggs of a bill that replaces a GOP-controlled seven-member State Highway Commission by a five-member body with a Democratic majority. Two Democratic members of the ousted commission have been named to the new one.

PAYS $2,422 for $36,400 ERROR—The Seattle Board of Public Works has accepted a check for $2,422 from a paving contractor in exchange for the favor of not awarding him a contract.

After being announced as low bidder on a project that requires placing 36,400 sq yd of 8-in. concrete pavements, the Seattle Contracting Co. discovered that it had specified $2.65 per sq yd instead of $3.65 as intended—leaving itself open to a loss of $36,400.

Instead of insisting on the low bid the board decided to accept the contractor's offer to pay the $2,422 difference between what his bid would have been at the corrected figure and the second low bid. Thereupon, Northwest Construction Co. was awarded a $667,126 contract.

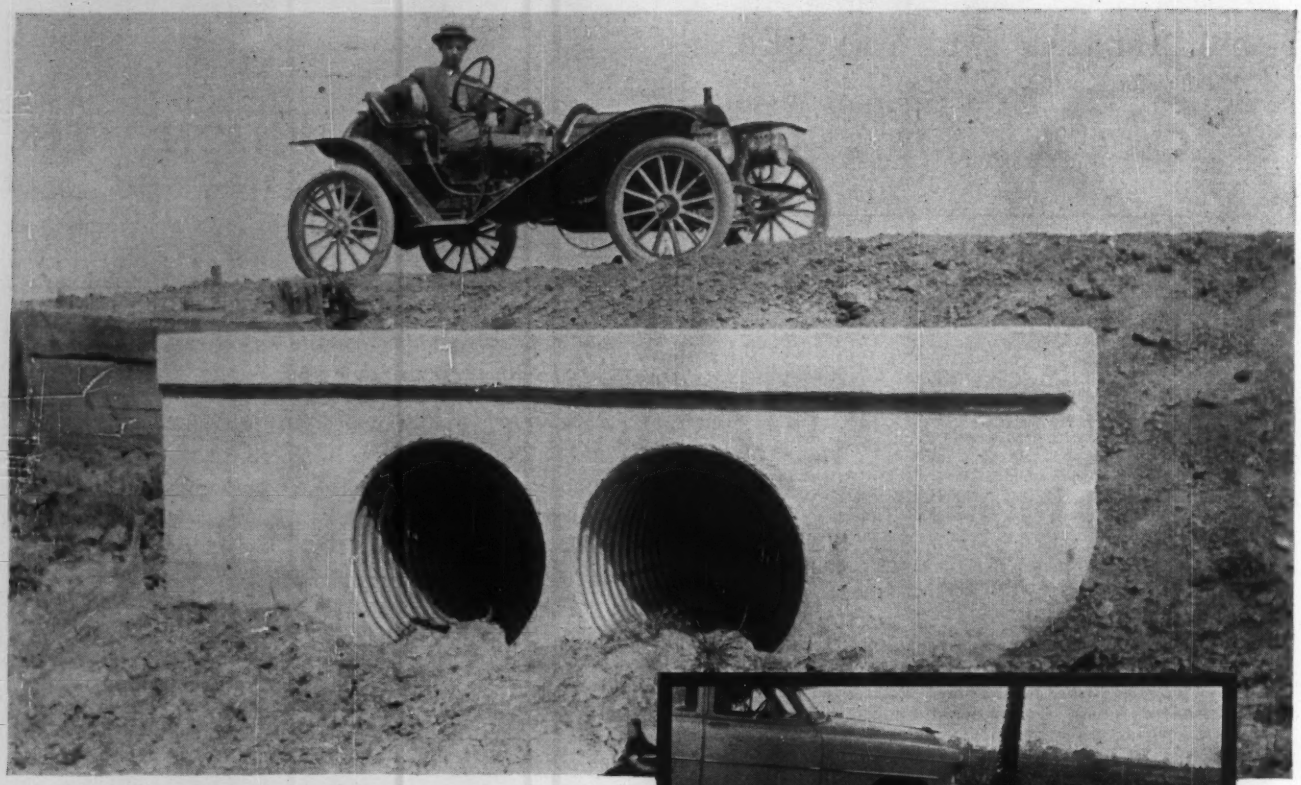
REGISTRATION PROBLEM—Because Milwaukee doesn't have a registered architect on its payroll, construction of a $40,000 fire station addition has been temporarily stymied. A City Council committee doesn't want to pay out $600 for the city-drawn plans to be reviewed by a private architect, unless its legal counsel just can't see any other way out.

Milwaukee's Bureau of Bridges and Buildings, which designed the structure, has been denied a city building permit because a registered architect hasn't signed its plans—a requirement of Wisconsin's architect and engineer registration law.

The bureau, headed by George C. Ashton, a qualified structural engineer, employs three young architects, none of them registered. Ashton says the city hasn't had a registered architect on the payroll since February 1953 and that efforts to recruit one haven't been successful.

Two firms have agreed to review the plans for a 1½% fee, instead of the usual 5% to 6% charge. Ashton told skeptical city councilmen he felt the $600 offer was reasonable and that the architects might make some worthwhile suggestions.

SCHOOL REPRINTS—Reprints of ENR's Staff Report on Schools, from its issue of May 26, are now available in quantity or singly at a nominal cost. ENR's Promotion Department, at 330 West 42nd Street, New York 36, will be glad to process requests made directly to it.



These CULVERTS

Have Seen a Lot of Changes Since 1910

The two photographs of this twin installation of Armco Corrugated Metal Pipe represent 45 years of drainage service. The 36-inch structures were installed near Stockton, California, in 1910. Today, their good condition promises many more years of trouble-free performance.

During these 45 years many changes have been made in highway travel and construction. And drainage structures, too, have had improvements.

In the 1920's Armco introduced PAVED-INVERT Pipe for erosive drainage service. A bituminous pavement provides protection at the point of maximum wear. Another development was bituminous-coated pipe—for corrosion-resistance. In 1936, ASBESTOS-BONDED was introduced to meet the need for structures in *severe* corrosive service. Other Armco developments have been Pipe-Arch for low headroom applications, and MULTI-PLATE structures (field-assembled from curved, corrugated plates) that provide the advantages of corrugated metal design in large, heavy gage Pipe and Pipe-Arch.

Today, you can bring your drainage problems to Armco with every assurance of getting the right structure to meet your specific needs. Write us for complete information. Armco Drainage & Metal Products, Inc., 4905 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO DRAINAGE STRUCTURES

ARMCO®

WASHINGTON OBSERVER

Bill to permit federal loans to local agencies for irrigation works projects started a new Agriculture vs Interior wrangle.

Idea is to let localities build facilities up to $5 million without having to get federal authorization and funds.

Instead, federal agency would lend the money and the irrigation district then can go ahead with the construction.

Texas objected to getting its money from Interior which, under the original plan, would be the money-lending agency. Texans said they'd want to have Agriculture be their source of funds.

House passed the bill with Interior the source for 16 western states and Agriculture handling the program for the 32 other states.

Westerners now wish bill had been limited to 17 reclamation states.

They'll take their case to the Senate Interior Committee which is meeting this week on the bill in executive session.

Some sort of bill may pass as things look now, although the wrangle over Agriculture and Interior could snarl it up.

•

Atomic Energy Commission is picking an architect-engineer firm to design the proposed new $10-million headquarters the agency needs. Congress has already approved the project.

Corps of Engineers is helping pick sites in the vicinity of Washington.

AEC hopes to advertise for bids by January—which means that some construction would get under way by early spring.

Project was originally planned as a lease-purchase building. But the Joint Committee on Atomic Energy decided to handle it through the regular appropriation procedure.

•

Democrats in the House got together to put out their own highway bill. Republicans already charge that the maneuvering is strictly political.

Top Democrats, including Speaker Rayburn, want to make highways an issue. They figure they can make hay with a highway bill that puts out the money for roads but without setting up a special bond-issuing corporation.

They're also against earmarking federal gas tax for highways.

Fear of losing Democrats on the Roads Committee to the Eisenhower plan caused them to hold caucuses of Democrats on the committee while they worked out their own measure. After that, they say, they would have no trouble voting the Democratic version—much like the Senate's Gore Bill.

•

Hoover Commission proposal to change budget procedure on financing dams and other projects that take years to build isn't likely to get very much attention.

Idea is to appropriate only one year ahead, instead of all the money needed to finish the project, regardless of how many years it takes.

Already, Army Engineers and Reclamation follow some of the practices on water resources projects that the commission recommends. Congress only votes money for the next year's work.

On the other hand, military construction doesn't begin until all funds needed for completion have been voted. Same thing applies to AEC.

But Republican Clarence Brown and Democrat Chet Holified dissented from the many suggestions for changing around the federal budgeting and appropriation procedure. They doubt benefits claimed.

How Link-Belt Speeder engineering helps both the shovel-crane and the operator

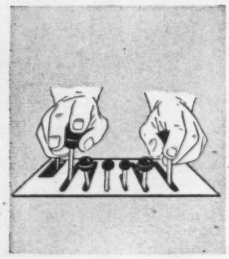
increase earning capacity!

LS-98 with 60′ boom and 1¼ yard bucket works in sand and gravel pit.

You're ahead on every job —Link-Belt Speeders—whether crawler or rubber-tired—are years ahead of the shovel-crane industry. Only Link-Belt Speeder offers you Speed-o-Matic—the true power hydraulic fingertip control system. Only Link-Belt Speeder offers you so many outstanding design, construction and operator advantages. For facts on every machine in the ½ to 3-yd, 10 to 60-ton work range—contact your Link-Belt Speeder distributor or write Link-Belt Speeder Corporation, Cedar Rapids, Iowa.

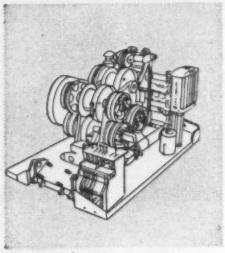
13,840

Two-way speed increase



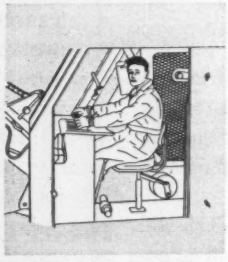
● Speed-o-Matic, the true power hydraulic control, provides fast, easy, smooth response . . . ideal control *for speed with accuracy*. It's also engineered to *reduce operator fatigue* — enables him to maintain greater output with less effort.

Extra power, stamina



● Anti-friction bearings, splined shafts and precision-machined surfaces at every important point convert more *rated* hp into actual line pull. All-welded, stress-relieved construction permits use of extra power.

More work-time



● Speed-o-Matic reduces operator fatigue, losses due to end-of-the-shift letdown. Further, it minimizes downtime. For example, Speed-o-Matic clutch is hydraulic actuated, self-compensating. Eliminates frequent stops for adjustment.

A demonstration can be arranged to suit your convenience. See one of these great machines in action and judge for yourself why they are today's most advanced shovel-cranes.

LINK-BELT SPEEDER

Builders of a complete line of crawler and rubber-tired shovel-cranes

At ASCE's Convention . . .

Water and Power Development Hold Spotlight

J. R. Carr
Associate Editor

Sharp criticism of the federal government's activities in the fields of water resource development and electric power production marked the panel discussions last week at the convention of the American Society of Civil Engineers at St. Louis.

The criticism came from men who are close to the problem—members of the Hoover Commission's task force on water resources and power. They presented papers on power generation and distribution, reclamation and water supply, flood control and improvements to navigation.

Then, Adm. Ben Moreell, chairman of the task force, summed up the conclusions. "The most important conclusion," he said, "is that federal activities in water resources and power development have taken place without central supervision in the executive branch of the government, except for cursory action by the Bureau of the Budget.

"Furthermore, there is no clear-cut, unified body of federal water policy. Instead, there are diverse policies for different types of development and different agencies, variously authorized and financed. Each is programmed under different ground rules and often is in conflict and competition with another. There is an imperative need for a clear-cut definition of the role and policies of the federal government within the framework of a consistent national water policy."

• **Opposes public power**—Adm. Moreell declared that the federal government should get out of the electric power production business. "In hydro power development," he said, "the federal government has invaded a field which should be reserved for private enterprise. Technically and financially there is no present or prospective need for federal power activities.

"It is logical to conclude that no additional federal power projects should be constructed and that a start should be made on disposing of federal projects to private industry or, if this is not feasible, to the states and local governments."

Adm. Moreell expressed regret that the report of the Hoover Commission on the work of his task force has not yet been made public. He stressed that he and the members of his task force were speaking as individuals. He said their opinions might, or might not, agree with the task force conclusions and recommendations.

"However," he added, "with respect to statements of fact, they are supported by official data in the task force report which will be available later this month."

ADM. BEN MOREELL is head of the Hoover Commission task force on water resources and power.

• **Power**—John Jirgal, Chicago consultant in utility finance and chairman of the task force group on power generation and distribution, told the convention his group had found that the engineering work and physical operation of federally owned power systems followed the best practices of private industry. He said his group had prepared a 600 page report as its part of the over-all task force report to the Hoover Commission.

Jirgal predicted rapid development of atomic power facilities. He said a considerable portion of the nation's power requirements will come from plants using nuclear reactors in the not-too-distant future.

"This carries with it grave responsibilities," he warned. "For whatever authority controls in one hand the power sources of an industrial nation can, if it so elects, control all industry. For this reason, it seems to me urgent that our national philosophy on power be reviewed and directed to the end that local, non-federal organizations develop all our power requirements from whatever energy source—coal, oil, gas, falling water or atomic energy."

• **Flood control**—W. W. Horner, St. Louis consulting engineer and chairman of the group on flood control, told the convention his group had learned, for one thing, that flood control is a lusty giant, measured in construction dollars, and still growing at a rapid pace. Horner said 423 of the 1,035 flood control projects authorized during the past 20 years have been completed or are under construction. They represent $5.7 billion of construction of the total $11-billion program authorized.

The backlog of 610 projects will cost an estimated $5.5 billion, Horner said. The Chief of Engineers has classified 390 of these projects as active and ready for construction. These projects will cost $3.5 billion.

Horner emphasized that this costly flood control program is paid for almost entirely by the federal government. In many instances, he said, beneficiaries of the projects make only a token contribution even though they are financially capable of paying substantial parts of the cost.

He said the studies of his task group led to the conclusion that Congress should take a new and objective look at the whole question of federal flood control responsibility. "In my opinion," Horner said, "The national policy should be restated to restrict the program to major projects of national significance. Moreover, it should require the direct beneficiary to agree to pay a substantial part of the cost."

• **Reclamation**—Leslie A. Miller, former Governor of Wyoming and chairman of the group on reclamation and water supply, expressed similar views on cost participation. He said his group will recommend in its report that Congress provide a uniform policy requiring all beneficiaries of all water resource developments to be assessed a portion of the cost.

Non-agricutural areas, urban and suburban, should be required to share

Actions by ASCE Board

Task force to select site for Engineering Societies Center recommended; sanitary engineer certification plan passed

At its regular executive session, the Society's Board of Direction recommended the appointment of a special joint task committee to study the selection of a site for an Engineering Societies Center.

This 15-member committee would include the presidents of the five engineering societies concerned ASCE, ASME, AIEE, AIME and AIChE plus two additional representatives of each society.

The committee would be charged with recommending a specific site for the Engineering Societies Center based on a comprehensive study of feasible locations. It would be supplied an operating budget and would be empowered to engage professional consultants. The board recommended that the five societies jointly contribute a total of $75,000 for the operating expenses of the task force and voted to appropriate ASCE's share of that amount if the other four societies agree to the plan.

St. Louis added another possible site for the proposed center. The city offered a site adjacent to the downtown district.

Enoch R. Needles, partner in the consulting firm of Howard, Needles, Tammen and Bergendoff, was selected by the board as official nominee to be the next president of ASCE. The election will be held next October in New York City.

• **Certification of sanitary engineers**—The board approved an agreement by the society to foster the proposed American Sanitary Engineering Intersociety Board for the certification of sanitary engineers. ASCE will make an interest-free loan of $7,500 to implement the plan.

The project to establish the intersociety board was developed through the Joint Committee on the Advancement of Sanitary Engineering under the chairmanship of Ernest Boyce, of the University of Michigan's Civil Engineering Department.

In addition to ASCE, this committee includes the American Water Works Assn., the Federation of Sewage & Industrial Wastes Associations, the American Society for Engineering Education and the American Public Health Assn. The plan is expected to be initiated at an early date. One of the first steps will be to incorporate the certification board.

The Board of Direction also approved the creation of a task force to review the health and accident insurance plan which has been made available to members of the society. And it decided to continue studying the question of competitive bidding on a price basis for engineering services in an effort to define the areas in which ethical practices are in question.

• **Proceedings Packet**—A new Proceedings Packet has been developed and will be available to members of the society beginning about the first of next year. It is a simple modification of present procedure designed to make the proceedings more useful as a technical publication.

Technical papers of each division of the society will be grouped under one cover as a journal of the respective division.

ENOCH R. NEEDLES was the board's nominee to be next president of ASCE.

21 Engineers Propose Plan To Raise Funds for Center

A group of 21 leading educators and industrialists—all engineers—have proposed the organization of a national committee to solicit funds for a new Engineering Societies Center.

Their proposal was made in a letter addressed to the five engineering societies now engaged in a search for a new headquarters and to United Engineering Trustees, owner of the present headquarters at 33 West 39th Street in New York City.

The group said the new headquarters should be selected for "the long-range interests of the societies in serving their professions and the nation" —not because of inducements offered by various cities. Pittsburgh, Chicago, Philadelphia and St. Louis all have offered sites or cash gifts.

The group suggested that a "competent and independent management or engineering firm" be employed to study the problem of site selection.

Those who signed the letter included James F. Bell, Minneapolis; Detlev W. Bronk, Washington; Ralph J. Cordiner, New York; James Creese, Philadelphia; Jess H. Davis, Hoboken, N. J.; Lee A. DuBridge, Pasadena, Calif.; T. Keith Glennan, Cleveland; Eugene G. Grace, New York; Crawford H. Greenwalt, Wilmington, Del.; William H. Harrison, New York; Livingston W. Houston, Troy, N. Y.; Frederick L. Hovde, Lafayette, Ind.; Kaufman T. Keller, Detroit; Marvin J. Kelly, New York; Horace P. Liversidge, Philadelphia; John L. McCaffrey, Chicago; Alfred P. Sloan, Jr., New York; Charles A. Thomas, St. Louis; Martin D. Whitaker, Bethlehem, Pa.; Robert E. Wilson, Chicago; and John D. Wright, Cleveland.

. . . Convention continued from page 21

the cost of projects from which they benefit just as the farmer should pay for irrigation water, Miller said. He also recommended that the states should pay part of the costs of water projects.

Miller suggested that Congress should recognize as the primary measure of the economic worth of a project the degree to which all classes of beneficiaries were willing to share its cost. He said the federal contribution to the cost of a project should not exceed the sum of the state and local contributions.

• **Navigation**—Carey H. Brown, chairman of the group on improvements to navigation, said his report followed much the same line. Urging that tolls be charged on certain inland waterways, Brown, who was a member of the Engineers Joint Council water policy task force, declared:

"With adequate user charges, navigation expenditures would be investments rather than expense. Discrimination between different forms of transportation would be mitigated, if not entirely eliminated. Any uneconomic projects would stand little chance of approval. The charges should be adequate to reimburse the federal government at least for maintenance and operating costs of existing improvements."

House Votes Funds

Chamber restores cuts made by committee and passes public works bill

Construction funds for flood control, reclamation and rivers and harbors projects were increased nearly $90 million by the House last week in the public works appropriation bill it sent to the Senate.

The House overrode committee recommendations for construction cuts and restored all project funds that had been slashed from the bill by the Appropriations Committee (ENR, June 16, p. 21).

The House blocked Democratic efforts to kill the Dixon-Yates steam power plant at West Memphis, Ark., approved funds to resume construction of controversial Tuttle Creek Dam in Kansas, denied federal cash for deepening the Delaware River, stepped up Army Engineer construction money by some $50 million, and added $33 million to the engineering-construction funds for the Reclamation Bureau.

Senate approval of the House increases is expected. Such changes as the Senate makes are more likely to be additions than reductions. Differences then will be reconciled in conference.

• **TVA**—Republicans scored a clear-cut victory for President Eisenhower's plan to let private power replace the TVA energy supplied to atomic energy plants. The House voted down 198 to 169 a committee amendment that would have given $6.5 million to TVA to start the Fulton steam plant near Memphis, Tenn., instead of using the money to build a transmission line connection with the Dixon-Yates plant across the Mississippi River, as the Administration had requested.

Licked on that issue, the Democrats decided not to bring up a second proposal that would have denied use of the $6.5 million for the transmission line. They conceded later that they had made a mistake in not having the Democratic majority on the Appropriations Committee write into the bill a specific denial of funds for the Dixon-Yates project. The committee had merely switched the $6.5 million to the Fulton steam plant.

Republicans now say that, with the $6.5 million in the bill, the money can be used for the TVA half of the cross-river connection with the Dixon-Yates plant. The battle will be resumed in the Senate.

• **Reclamation**—Construction funds for the Reclamation Bureau were stepped up $32 million to the total of $146 million asked by the Administration. Money for general investigations likewise was boosted to $5.1 million—just $70,000 short of the budget estimate—from a committee figure of less than $3.7 million.

House action restored funds for seven projects that the committee had eliminated entirely—including $520,000 to start Michaud Flats in Idaho. The House vote increased the appropriation for construction in the Missouri River Basin by $11 million to $56 million and added more than $1 million each to the Lower Marias Unit, Mont. (up $2.8 million to $6.5 million), the Middle Rio Grande Project, N. M. (up $1.4 million to $7.2 million), the Columbia Basin Project, Wash. (up $1.5 million to $12.5 million), and the Weber Basin Project, Utah (up $1.1 million to $10.9 million).

Also, the Missouri Basin Transmission Division was increased from $15 million to $16.5 million.

• **Army Engineers**—Civil works projects of the Corps of Engineers got an overall increase in general construction funds of nearly $48 million, plus a $4.2 million addition for the lower Mississippi River. Included are $3 million more for the Central and Southern Florida Project, and $900,000 for Dardelles Dam, Oklahoma.

These increases boosted general construction funds for navigation and flood control projects to about $356 million, raised the lower Mississippi construction figure to about $47 million and stepped up the Florida Project to $6.3 million.

The changes, in general, restored the funds to the amounts requested by the Administration. Eight projects on the general construction list were boosted more than $1 million each, the largest increase going to The Dalles Dam on the Columbia River—up $3.5 million to $63.5 million.

• **Other agencies**—Also included in the bill is a $15 million construction appropriation for the Bonneville Power Administration, along with lesser funds for the operation of that agency and the Southeastern and Southwestern Power Administrations. Another large item of $618 million is to provide funds, supplemented by $740 million previously appropriated, for operating expenses of the Atomic Energy Commission. The House committee said AEC could come back for additional money after getting authorization for new construction projects.

As passed by the House, the bill would provide about $515 million in all for the civil functions of the Corps of Engineers and about $180 million for the Bureau of Reclamation.

34 ASCE Papers

Convention also discusses how to produce more and better engineer graduates

ASCE divisions listened to a total of 34 papers during the opening day of the convention. Subjects covered included water and sewage disposal during prolonged drought, wind tunnels, flood control, air conditioning, structural research, hydraulics, professional ethics, city planning, highways, hydro power, soil mechanics and surveying.

Brig. Gen. John Robert Hardin, president of the Mississippi River Commission and five of his principal aides described proposed plans for controlling Old River and preventing the Atchafalaya River from capturing the lower Mississippi. The Old River project will cost $47 million, plus the cost of a navigation lock now being designed.

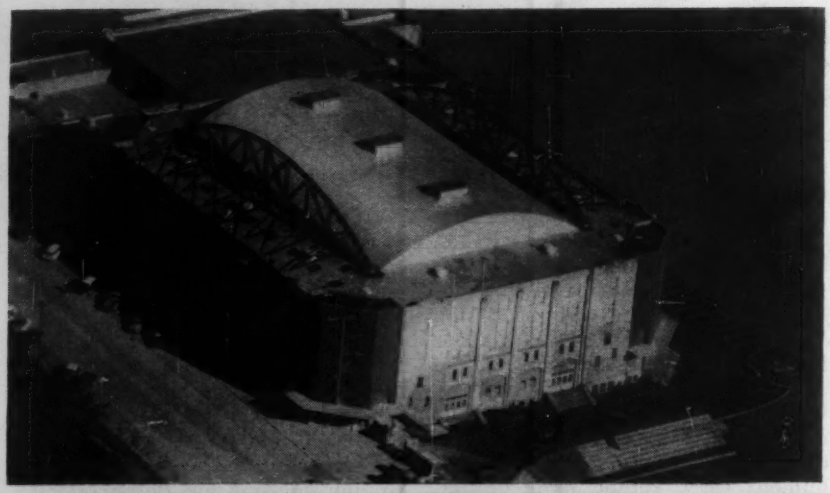
The problem of how to produce more and better trained engineers received a lot of attention. Weston S. Evans, professor of civil engineering at the University of Maine, said the engineering graduate of the future will be better equipped to learn but poorly versed in what to do and how to do it when he graduates.

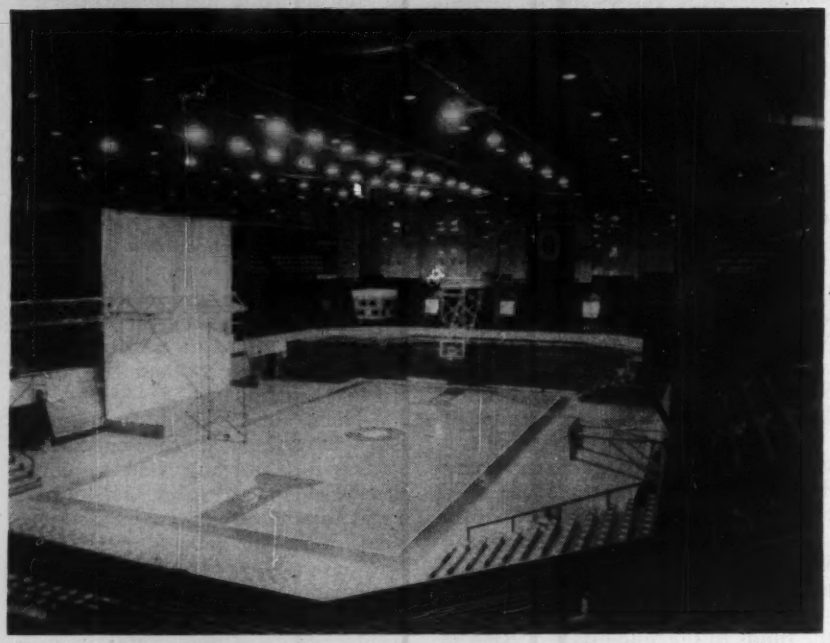
"There appears to be a widening gap between what the engineering schools turn out and what employers of civil engineers expect. The current trend toward making engineering curricula more general and more scientific has resulted in less drawing, less surveying, less design, and, in fact, less of everything the young graduate would normally find useful immediately following graduation," he said.

Another speaker, Adolph J. Ackerman, chairman of the ASCE Task Committee on Engineering Education, estimated that 40,000 new engineers in all categories are needed each year. This figure about equals the number of engineering graduates in 1951, but since then only about 20,000 have been graduated each year. The fact that there appears to be no prospect of meeting this deficiency is currently the cause of deep concern to both engineering education and industry, he said.

"A move is under way," said Ackerman, "to prepare a plan for financing a comprehensive survey and analysis of the civil engineer profession and its educational problems. Such a survey would require at least a year and will call for a very substantial sum of money."

Total registration for the four-day convention was 672, including 150 ladies, according to Brice R. Smith, general chairman of the convention.





Trusses Boost Gym's Seating Capacity

A clever construction job has increased the seating capacity of the University of Oregon's basketball pavilion from 8,000 to 11,000 inside the 30-year-old building, also objectionable columns were eliminated.

The additional seating is in two new balconies, one of six rows and one of four rows. Sight-line studies indicated that a single balcony would have seated 10% fewer persons.

The roof was wood lamellar construction of 120-ft span. It was supported on timber trusses, which in turn were supported on 54-ft centers. Support columns were located at the third points of the main side balconies.

Approximately 200 balcony seats had marginal visibility because of these intermediate columns, they were eliminated by placing timber bowstring trusses on each side of the building above the roof extending from end column to end column—a span of 162 ft with a 21-ft, 5-in. rise. These trusses were made of pressure-creosoted, glued-laminated timber, with hot-dipped galvanized hardware. A series of glued-laminated pressure-creosoted wood A-frames fastened to the exterior walls provide top-chord stability. Four $1\frac{3}{8}$-in. dia rods at each of the eight interior truss panel points extend through the roof to carry the existing roof trusses.

The two new balconies are framed with wide-flanged steel beams on 18-ft centers and sheet metal risers spanning beam to beam. Each beam is supported at the court end with steel hangers extending to the roof purlins.

Lawrence, Tucker & Wallmann was the architect. Cooper & Rose was the consulting engineer. H. G. Carl Construction Co. was the general contractor. And Timber Structures, Inc., furnished the wood trusses.

Port Improvements

New Orleans docks to get additional modernization under new three-year plan

The port of New Orleans is ready to get started on a new three-year construction program estimated to cost $19.5 million.

The program includes construction of two new wharves at an estimated cost of $2 million each. It also calls for rebuilding and enlarging existing wharves, a job that will involve replacement of wooden construction with concrete and steel.

The projects are a continuation of the Dock Board's integrated construction program that got under way in 1952. Some $53 million of major improvements have been scheduled, started or completed since that year.

Surveys have been started on some of the new projects, and the present schedule calls for $8.2 million in work for the year starting July 1. Expenditures slated for 1956-1957 total $5.9 million, and those for 1957-1958 add up to $5.4 million. On the drawing boards are additional projects estimated to cost $24 million. This work, however, will not be scheduled until the present program is completed.

Work on the first of the two new wharves is expected to start during the coming year. This facility will be the first one to be built by the Dock Board on the west bank of the Mississippi River. The port—along more than 7 mi of publicly operated waterfront—has over 5,000,000 sq ft in covered area and 2,000,000 sq ft uncovered, but all of it is on the east bank.

Work on a third new wharf for the port—at Thalia St.—started last year, but has been suspended pending progress on a Mississippi River bridge at that spot (ENR Jan. 20, p. 27).

The current construction schedule calls for the following expenditures:

- In 1955-1956—First and Harmony Sts. open wharves, $700,000; First St. wharf, $2 million; grain elevator No. 1, $750,000; Industrial Canal, additional development, $250,000; St. Andrew St. wharf, $1.1 million; Toulouse St. wharf, $1.5 million; new west bank wharf, $2 million.
- In 1956-1957—Toulouse and Dumaine Sts. wharves, $1.8 million; No. 1 grain elevator, $750,000; Third St. wharf, $2.3 million; new half-wharf in the vicinity of Nashville Ave., $1 million.
- In 1957-1958—Half-wharf, completing the new wharf near Nashville Ave, $1 million; St. Andrew St. wharf, $2.6 million; Gov. Nicholls St. wharf, $1.8 million.

AWWA's 75th Annual Meeting

American Water Works Association in Chicago draws record attendance to hear variety of technical discussions

The 75th annual meeting of the American Water Works Assn. in Chicago last week was highlighted by technical discussions of water works design, disposal of radioactive wastes and the use of fresh water barriers to halt salt water intrusion.

Attendance at the meeting set a new record. A total of 2,550 persons were registered, a gain of 25% over last year's previous record of 2,062. There were 93 exhibitors, also a new record.

Many of the sessions attracted capacity audiences, notably an administration committee meeting that gave those present an opportunity to hear from their incoming president, F. C. Amsbary, Jr., of Champaign, Ill., who spoke on "Use of Water in Air Conditioning."

A safety committee report by Raymond J. Faust announced completion of a "Safety Manual for Water Utilities" that is now in the hands of editors and will be published in the association journal in July. The manual was written, according to Faust, essentially as an administrative tool that may be used in the operation of a water utility.

Considerable attention was given to a paper presented by Finley B. Laverty of the Los Angeles County Flood Control District on development of a fresh water barrier in Southern California for prevention of salt water intrusion into coastal groundwater basins.

The state allocated $750,000 in 1951 to find methods of halting the intrusion, and the flood control district was drafted to plan and operate a series of injection wells in a pressure aquifer to stop inland flow of sea water.

Discussing the geologic and hydraulic conditions encountered and the facilities installed and their operation, Laverty described the building of a pressure mound in an aquifer. Chloride concentrations in this area approached 18,000 ppm. Conclusions were presented relative to feasible rates of injection and the size, type and spacing of wells.

• **Costs**—Pointing up an increasing drive by the water industry toward economical design and construction of facilities was a panel discussion dedicated to the unique features that are being incorporated in water treatment plant design.

Thomas Riddick, consultant of New York City, described a filtration plant at Oneonta, N. Y. The 4.5 mgd plant, representing 10 years of development, will be constructed for an estimated $100,000 per mg, a saving of approximately 40% over a plant of equal capacity and conventional design.

Riddick attributed the saving to simplified design of concrete; a reduction in clear-water-basin storage requirements; the elimination of wash-water tank; placing of filtered water basins between two banks of filters—thus eliminating heavy reinforcing, beam and girder construction of filter slabs; simplification of roof slab construction; elimination of complex and costly piping in the filter gallery; and the employment of a common wall in the construction of sedimentation basins and filters.

Automatic control over much of the plant, together with the use of lightweight butterfly valves where possible, make a one-man operating shift feasible for plants running up to 20 mgd in size.

• **Chicago tunnel**—At a later session, those with large-volume water problems had their inning. George S. Slater, chief filtration engineer for Chicago, reported on the progress of hard-rock tunnels for the Central District Filtration Plant with a rated capacity of 960 mgd. Six miles of tunnel, including 1,400 ft of 20-ft-dia and two major sections of 16-ft-dia tunnel sections will connect the plant with Wilson Ave. and Chicago Ave. They are horseshoe sections in rock and vary in depth from 160 ft to 220 ft below lake level. The filtration plant is expected to be in operation in 1960.

• **Radioactivity**—W. A. Rodger, of Argonne National Laboratory, Lemont, Ill., cited several methods that have been moderately successful in treatment for disposal of radioactive wastes.

Among the methods has been casting of water with radioactive waste in concrete blocks and disposal of the blocks in remote areas or in abandoned mines.

Rodger opposed disposal of radioactive waste at sea. He said that loss of control of large amounts of by-product about which we know so little might prove expensive in the event that an economic use for the waste could be found.

Smog Control Hits Snag in Los Angeles

Smog control has run into a snag in Los Angeles, but the California legislature has cleared the way for improved control measures in San Francisco.

The Los Angeles County Board of Supervisors postponed the effective date of its controversial ban on backyard incinerators from July 1 to October 1. The county's determination to ban incinerators by July 1 met with two major obstacles—lack of adequate refuse collection facilities and heavy opposition from residents.

A report to the board said that only 25 of the 45 incorporated cities covered by the ban had adequate collection systems. Seven, including the city of Los Angeles, had no plan at all for either municipally operated or contracted collection systems.

Another problem, once the ban is effective, will be disposal of the 4,000 tons of rubbish a day that backyard incinerators now handle. The Air Pollution Control District reported that only nine municipal incinerators currently are in operation in the county and some of these fail to meet APCD standards. It is estimated that some 50 additional incinerators would be needed if all refuse were to be handled by that method.

How much backyard incinerators contribute to smog has been a controversial question, but both APCD and the Air Pollution Foundation believe the contribution to overall air pollution is enough to make a ban on them essential.

• **San Francisco**—The California legislature passed a bill setting up a San Francisco Bay Region Air Pollution Control District to begin functioning Oct. 28. The district will have the power to levy taxes.

The district's governing body will be a 12-member board of directors made up of a supervisor and a city representative from each of the six counties that will participate initially. The law also provides for a 20-member advisory council. An air pollution control officer appointed by the board will enforce the act.

Regulations adopted by the board will be enforced through court injunctions rather than fines. The air pollution control officer will request analyses of air contaminants. If the result in any case is a finding of pollution with no justification for a temporary variance, the case will go to the District Attorney, who will seek an injunction.

Sometimes Construction Loses When . . .

State Legislatures Go Down the Home Stretch

State legislators were showing signs of getting weary of the grind with the advent of summer this week and generally were trying to rush—too much so, in some instances—their adjournment.

Haste makes waste for Connecticut legislators, who left money bills in such a jumble when they adjourned June 8 that they were back in session again this week trying to make amends.

Texas legislators adjourned with their No. 1 chore for the session left undone. They failed to agree on the best means of financing a $100-million bond issue for water conservation.

Highways continue to rate positive action in most legislative chambers. Louisiana legislators, for example, are asking voters to OK spending of $15 million in oil revenues a year for road-building and to grant $60 million in standby bonding authority. Texas boosted its gas tax; Connecticut will do likewise.

• Louisiana

Two constitutional amendments to be voted upon in the April 1956, general election contain the key features of the highway program adopted by the Louisiana legislature.

A sum of $15 million a year in oil revenues would be devoted to highway construction under one of the proposed amendments, including $12.5 million from royalties and $2.5 million from oil bonuses and leases.

The other provides stand-by bonding authority for highway construction, with an overall limit of $60 million and a $30-million maximum in any one year.

Immediate steps to expedite the state's road program were incorporated in six other highway measures, which included a $15-million appropriation and a bill providing for classification of the state highway system.

Gov. Robert F. Kennon vetoed a bill that would have provided $33.5 million for school construction. In his veto message, he said there was a serious question as to whether the state could provide the funds without excessive new state taxes. He also noted that local school boards were being given a helping hand anyway as a result of an enabling act passed by the legislature that permits the bonded debt limit for school districts to be raised from 20% to 25% of assessed valuation.

Louisiana legislators appropriated and the governor approved $13.9 million for new construction and improvements at 23 educational, charitable, and penal institutions and $5 million for establishment of a college for Negroes at Lafayette.

The session just ended was limited by law, to fiscal matters.

• Texas

Though water was its most urgent problem, the Texas legislature failed to authorize for referendum a constitutional amendment that provided for a $100-million program of water conservation projects.

Both houses of the legislature favored the objective—aiding cities, districts and counties to build dams and storage projects—but they couldn't agree on the method of financing.

The lower house held out for a use tax as a means of supporting the $100-million bond issue, contending that only those residents of the districts receiving the water benefits should be taxed. On the other hand, the Senate insisted that a general valorem tax was the only suitable means.

Efforts to iron out the differences in conference failed twice.

• **Highways**—The state's gas tax was boosted from 4 to 5 cents per gallon, increasing State Highway Department revenue by an estimated $20.6 million. This brings total gas tax revenue to $105 million per year, of which the highway department gets three fourths and the school program the rest.

The Texas Association of County Judges and Commissioners tried desperately, but without success, to get the legislature to give the cities and counties a share of the gas tax increase to cover the outlays they must make for rights-of-way for highways built by the state with its own and federal funds.

• Connecticut

Adjournment of the Connecticut legislature left fiscal measures in such a chaotic condition that Gov. Abraham Ribicoff has called it back into special session.

One of the chief casualties of the legislative fumbling was a bill to increase the state gas tax from 4 to 6 cents a gallon. Theoretically, the legislature passed such a measure. But, it can't become law in its present form.

The House bill made the gas tax increase effective July 1, 1956. The Senate amended the measure to make it effective July 1 this year. But nothing was done to reconcile the two versions before adjournment so that the governor has nothing he can sign.

The gas tax increase was calculated to boost highway construction revenue by $28 million a year.

Also lost in the melee was a bill that called for increasing tolls on existing toll roads and bridges to provide a base for financing other projects.

The legislature voted $84.8 million for State Highway Department operations for the next biennium. It also adopted a measure that requires the department to hold public hearings before new routes are laid out and to make public all proposed new route layouts before acquiring land.

A Greater Hartford Bridge Authority was created to build five toll bridges across the Connecticut River at a total cost of $45 million, for which revenue bonds will be issued.

The governor was authorized to appoint a nine-member State Building Program Commission to study state building needs, investigate sites, and recommend financing methods. It is directed to report to the General Assembly.

Nearly $20 million was appropriated for state institutional buildings, including $2.5 million to begin construction on a new $16.5-million state prison at Enfield.

For prevention of shore erosion, the legislators voted $2 million.

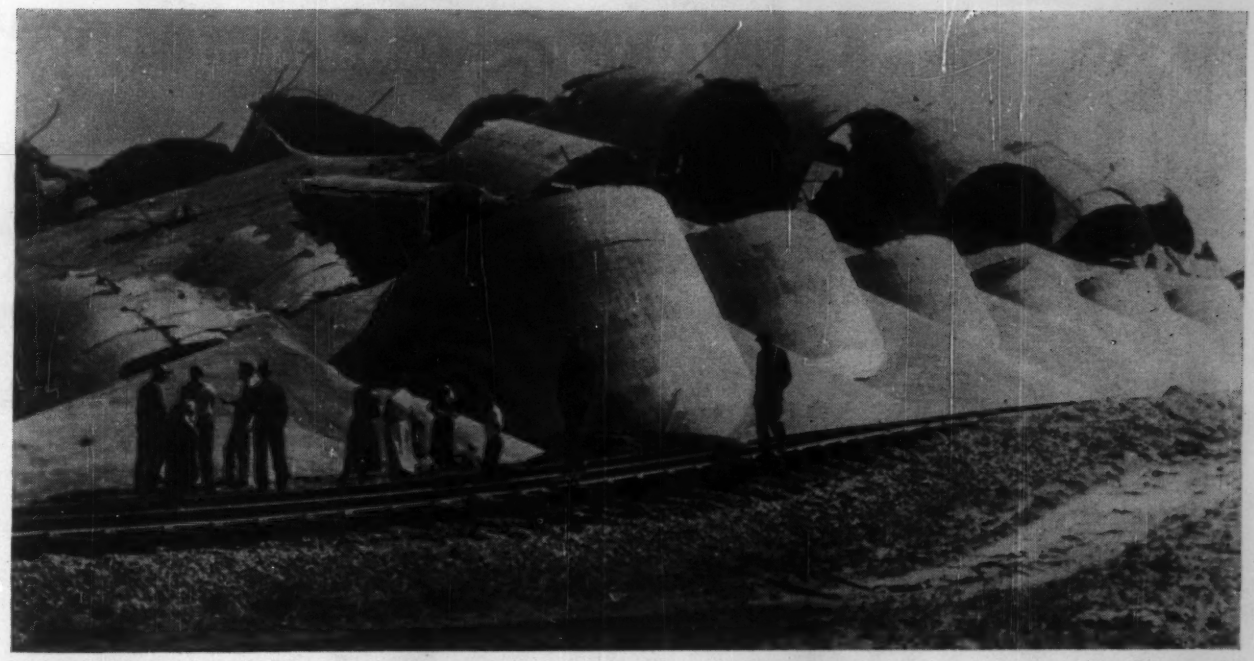
• New Jersey

The legislature has only recessed in New Jersey but has completed its work on appropriations, which included $52 million for various construction projects.

Construction funds for the State Highway Department amounted to $24.7 million; another $15.7 million in state-aid was made available for county and municipal road work.

Use of $6.2 million of non-budgeted, non-recurring reserves over a three-year period was authorized for a state office building program. Of this amount $4 million will be transfered from the Veterans' Guaranteed Loan Fund and $2.2 million will be derived from sale of state-owned veterans housing developments. Three office structures will be built in Trenton suburbs.

The New Jersey legislators made available over $1 million for beach protection projects and voted $550,000 for development of recreation areas.



CONCRETE GRAIN ELEVATOR less than one year old collapsed at Fargo, N. D., without warning the night of June 12.

Was It an Explosion or a Foundation Failure?

A large reinforced concrete grain elevator less than one year old collapsed at Fargo, N. D., shortly after midnight June 12. Nobody was injured, and there were no witnesses.

Government and insurance company engineers are still investigating the failure. (The federal government is involved because the Commodity Credit Corp., a government agency, had grain stored in the elevator.) Vance Arenson, deputy state fire marshal, said his office was not asked to investigate because there was no evidence of fire. There is no state building code, and the elevator is outside the jurisdiction of areas covered by local codes.

ENR asked Frank C. Mirgain, Dean of the School of Engineering, North Dakota State College at Fargo, for a report on the collapse: His reply: "An inspection of the site indicates evidence of a foundation failure caused by shear failure of the underlying soil."

The owner, Joseph Eichinger, however, expressed the belief that the collapse was caused by an explosion.

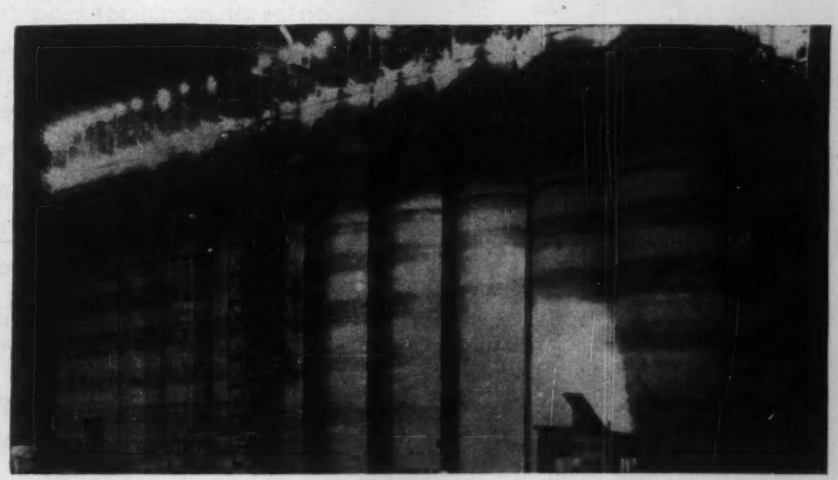
The 800,000-bu elevator, completed only last August, cost $400,000 to build. Covering an area 52x216 ft, it consisted of 20 circular silos 19 ft in diameter and 120 ft high. A head house extended to a height of 198 ft above ground. The foundation consisted of interlocked sheetpiles around the perimeter driven to a depth of 18 ft and topped with a 30-in.-thick concrete slab.

The superstructure was built by the slip-form method on a fee basis by the Ryan Construction Co., Omaha. ENR was unable to learn the name of the designer or of the foundation contractor.

Some settlement of the elevator had been experienced prior to the collapse, but apparently it had not appeared excessive to the owner. He said that "when it would move a little to the north or south, we would shift the grain—as is done in other elevators—to correct the listing." Eichinger also said that he worked at the elevator as late as 10 PM the night of the failure and had noticed nothing wrong when he left.

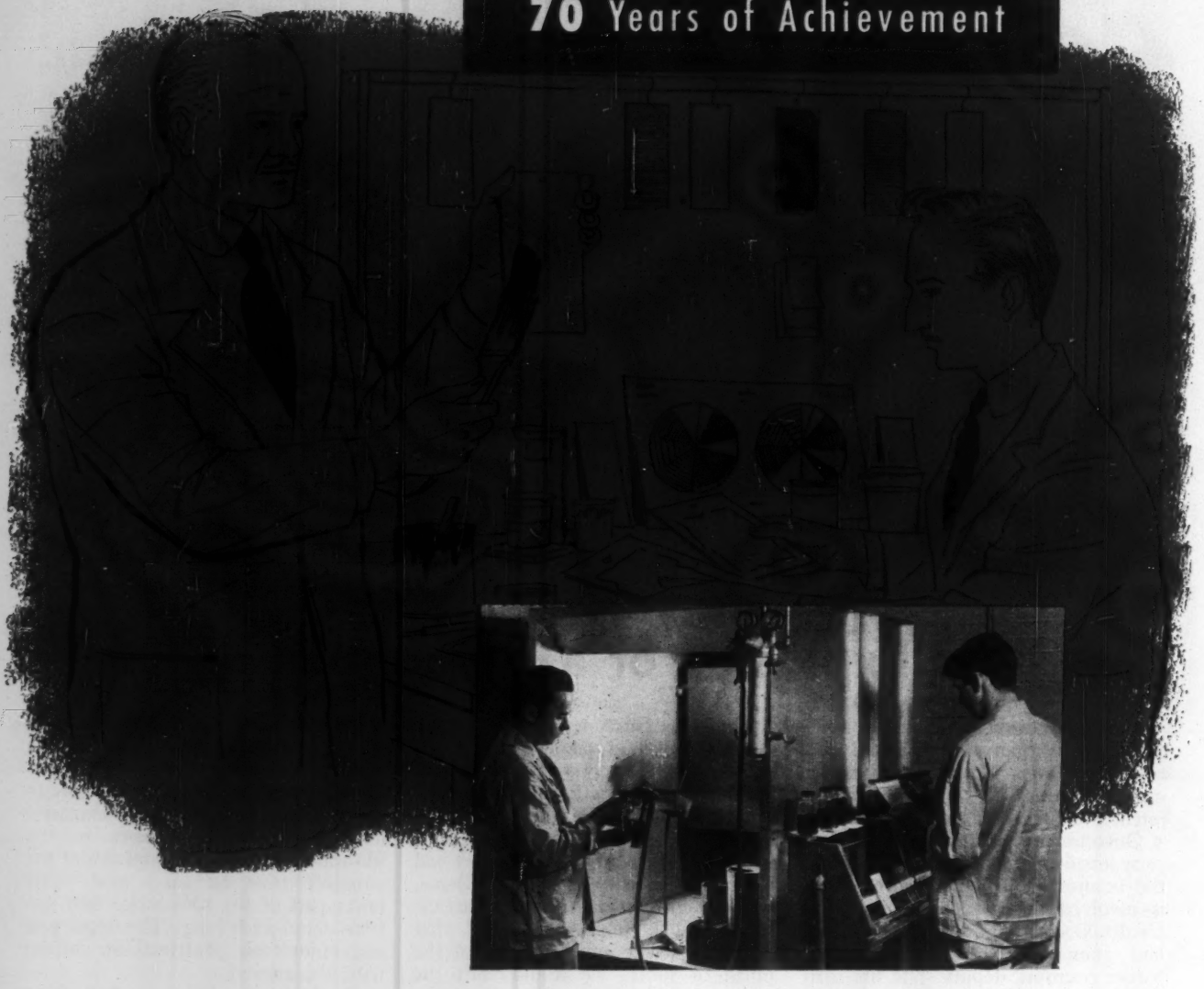
Dean Mirgain reported that a movement of soil to the south apparently permitted the north side of the foundation to settle, tilting the structure to the north and inducing excessive longitudinal tensile stresses in the silo walls. The longitudinal axis of the structure runs east and west. The lower part of the silos broke into sections about 15 ft long. The upper part was completely shattered by impact with the ground.

To the south of the structure along its entire length and for a distance outward of about 60 ft, if was observed that the ground was forced upward as much as 15 ft by the shifting of underlying soil.



CONSTRUCTION of the $400,000 elevator was completed last August.

70 Years of Achievement



Years come and go bringing with them new and better methods of operation. This is quite apparent at TOUSEY, where color matching, like other phases of manufacturing control, has been greatly changed in the past 70 years.

Gone are the yesterdays when color paddles were slowly and tediously painted by hand. Today the spray gun has replaced the brush — in the lab as well as the production line. We know that other changes are to come... changes that we are ready to make in order to keep up with the times and improvements.

Perhaps we can help with your finishing problems— why not let us try? Write today.

TOUSEY PRODUCTS
DURACOTE for DURABILITY

TOUSEY VARNISH COMPANY 520 W. 25TH ST., CHICAGO 16, ILLINOIS

Expressway Bill

Wisconsin measure creates fund to buy up land for future freeway projects

The Wisconsin legislature has passed a bill giving the Milwaukee County Expressway Commission the right to acquire land for freeways before it is needed for actual construction.

The bill, which Gov. Walter Kohler is expected to sign, creates a $5-million fund for purchasing land that otherwise would be developed with industrial, commercial or residential buildings and thus increase expressway costs. The commission would be given authority to lease these lands bought in advance of freeway construction.

A second major feature of the measure permits the commission to buy—or to acquire by other means—the air rights that would be needed for structures to carry freeways over existing buildings or lands.

In addition, the commission would be given the power to order changes in grades of city and village streets as well as the vacating of streets for freeway construction. Until now the commission has been required to await such action by individual municipalities.

The bill also requires the county to pay two-thirds of the cost for relocating utility wires, mains and other underground and overhead facilities in the path of expressway construction. Privately owned public utilities would be responsible for financing the rest of the relocations cost.

Reclamation Report Favors Federal San Luis Project

Federal construction of the $229-million San Luis project in California as part of the Central Valley Project has been recommended officially by the Bureau of Reclamation's Sacramento office.

According to the bureau report, the project is fully coordinated with operation of the proposed $1.5-billion Feather River project and is feasible if constructed as part of the Central Valley and the $216-million Trinity River project.

The final bureau report, which has been sent to Washington for review, is basically the same as the preliminary draft submitted to state officials last fall (ENR Oct. 7, 1954, p. 76). One change is that the planned 1,000,000 acre-ft San Luis Reservoir be expanded for an ultimate capacity of 2,000,000 acre-ft.

Besides the reservoir expansion, the final report recommends a 199,000 hp San Luis pumping plant near Los Banos and 104-mi San Luis canal from the dam with a capacity of 6,800 cfs reduced to 700 cfs at the terminus at Kettleman City. A Pleasant Valley pumping plant 76 mi from the canal head would divert 600 cfs into a branch canal.

About 700,000,000 kwhr would be needed annually to pump water to the San Luis area. The report assumes that power from the Central Valley Project, including Trinity, would be available. But it notes that arrangements could be made with another agency for power if such an agency constructed Trinity power facilities. Pacific Gas & Electric Co. has offered to build such facilities at Trinity and pay for falling water.

Both houses and the state legislature recently approved resolutions urging Congress to pass pending bills authorizing immediate construction of the Trinity River project and its integration with the San Luis project.

Bids on Mayfield Dam Job Run Far Below Estimates

Bids received for construction of Mayfield Dam and powerhouse on the Cowlitz River in Washington have run more than $9 million below the estimated cost of the project.

To date Tacoma City Light Co. has received bids totaling $17,347,944 for actual construction of the dam and powerhouse and for approximately 160 different types of electrical equipment. The original estimate for these items was $26.6 million.

The biggest savings came in bids for construction of the dam and powerhouse. The low bid of $10.9 million submitted by Arundel Corp. and L. E. Dixon Co. of San Gabriel, Calif., was $3 million below the median offer made by seven other firms. The California contracting combine recently completed work at Chief Joseph Dam in eastern Washington and estimates that it can move equipment and men directly to Mayfield at a considerable saving.

Contracts are scheduled to be awarded this week after the opening of bids for a $15-million revenue bond issue to finance start of work.

Mayfield Dam is the smaller of two projects proposed for the Cowlitz River at an estimated cost of $146 million (ENR Nov. 26, 1953, p. 46). The other project is a dam and powerhouse at Mossyrock.

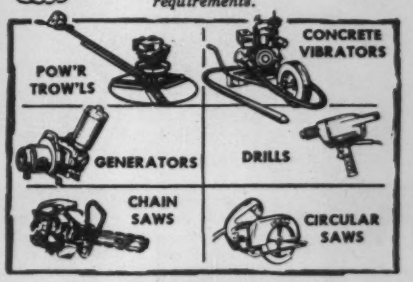
Mayfield Dam will be a concrete arch structure with gravity wings and thrust blocks. It will be 185 ft high, 850 ft long and will have a 205-ft spillway. The powerhouse downstream from the dam will be 110x270 ft

Mall

CUSTOM-BUILT TOOLS FOR YOUR CONSTRUCTION JOB...

GASOLINE
ELECTRICITY
AIR

What's your most convenient power source? MALL offers you the world's biggest assortment of GAS ENGINE, ELECTRIC, and PNEUMATIC power tools—a size, a style, a power head to EXACTLY fit *your special requirements.*



HERE'S HOW TO GET A

FREE

DEMONSTRATION

Just pick up your phone and call your MALL Dealer or nearby MALL office. (36 key branches coast to coast) Tell 'em which tools interest you most. Right now—mail this coupon for additional information.

MALL TOOL CO. PORTABLE POWER TOOLS Gasoline · Electric · Air

7730 South Chicago Ave., Chicago 19, Illinois

Send me literature on MALL construction tools.

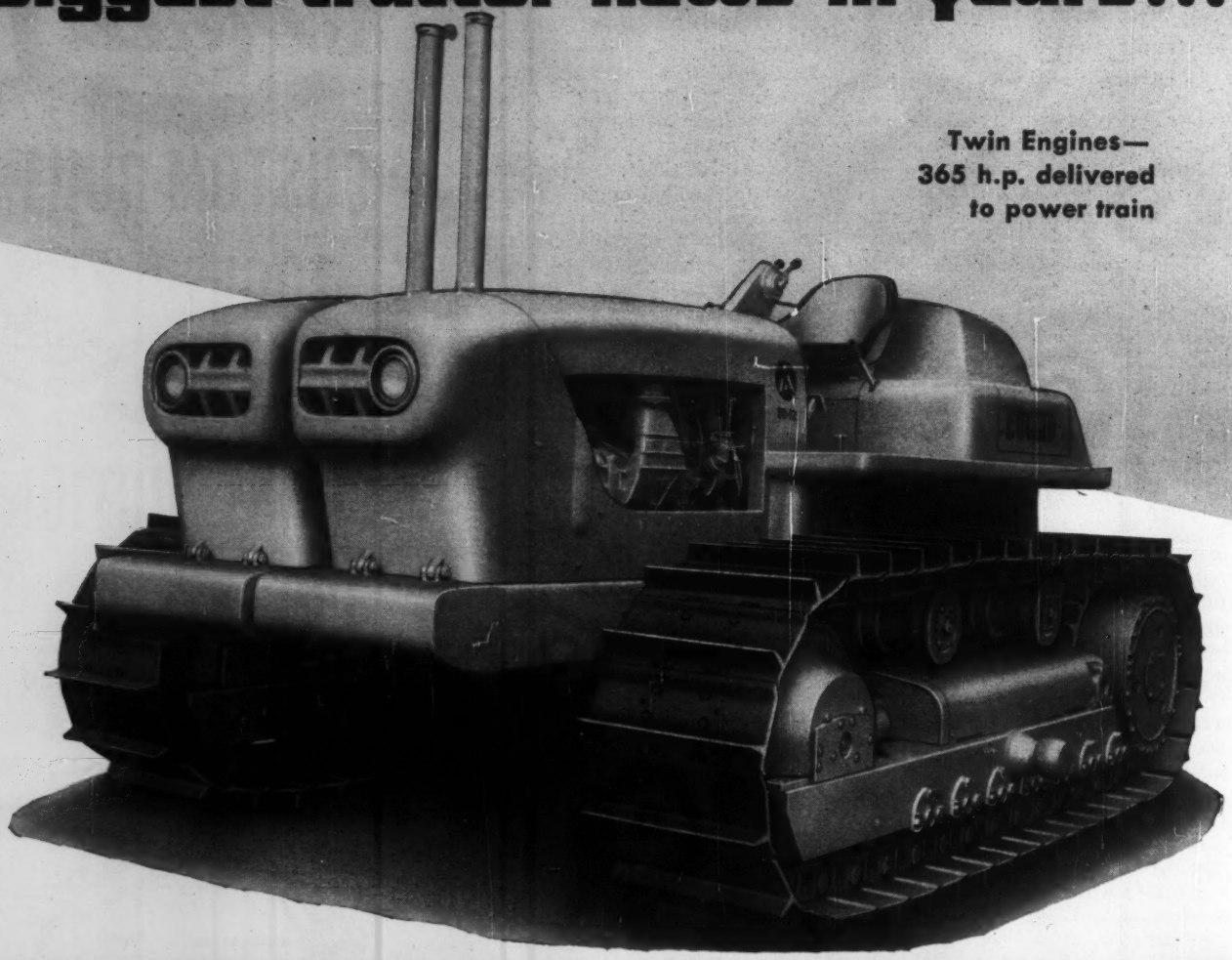
*Name*_____

*Company*_____

*Address*_____

CU-171

Biggest tractor news in years...



Unequalled Power...Smoother Operation...

Here's a completely new concept of crawler tractor design and performance . . . the new TC-12 Twin-Power Euclid. It's designed and built to give you all the features you want in a tractor—more power, easy operation, greater workability and accessibility for servicing . . . and all of the power train components are matched, with years of application in earth moving equipment.

Powered by two diesels with separate Torqmatic Drives for each track, the TC-12 has 365 h.p. available for tractive effort — a smooth steady flow of power to meet any job requirement. There's no master clutch and no manual gear shifting . . . the operator simply moves a lever to select one of three speed ranges — forward and reverse — for travel speeds up to 8.3 m.p.h. Maximum drawbar pull is equal to, or greater than, the weight of the tractor and any attachments.

Each half of the tractor is separate and free to oscillate on a single transverse shaft. This gives the TC-12 maximum stability and traction on rough ground. The tractor can be easily separated into two halves for shipment when necessary.

EUCLID DIVISION GENERAL MOTORS CORPORATION, Cleveland 17, Ohio

Never before so much WORKABILITY!

the "Euc" TC-12 Twin Crawler

INDEPENDENT TRACK DRIVES

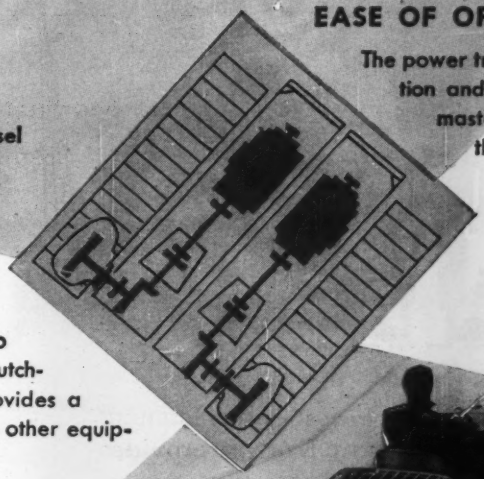
"Hair trigger" control of steering at all times and in any speed range, forward or reverse, is a result of each track having a separate power train. Spin turns, fast and tight, can be made by reversing one track and keeping the other in forward speed. Routine steering is done easily by putting one transmission lever into neutral and using the track brake. Fast, easy steering is one of the outstanding design and performance features of the "Euc" TC-12.

TWIN ENGINES

With 365 h.p. delivered to the power train, the TC-12 has far more horsepower than any other "big" tractor . . . and the weight to use this power as tractive effort. It develops greater drawbar pull at faster travel speeds . . . a mighty important feature for work with rubber tired scrapers and other crawler applications. A top travel speed of 8.3 m.p.h. and faster speeds in the working ranges give the TC-12 a big advantage in workability.

TORQMATIC DRIVES

Each track is driven by a GM 6-71 diesel through a separate Allison Torqmatic converter and transmission. Shifting from one of the three speed ranges to another can be done under full power with no loss of motion . . . the tractor can be shifted into reverse while moving forward so there's no lost time for stopping and clutching. The power train of the TC-12 provides a steady flow of power that's matched to other equipment and job requirements.



EASE OF OPERATION

The power train of the TC-12 provides simple operation and a smooth flow of power. There is no master clutch . . . shifting from one of the three speed ranges to another is done under full power with no loss of momentum. There's no delay for stopping or clutching. Independent track drives gives this "Euc" fast, easy steering under all job conditions.

More Workability

RADIATORS AT REAR

Rear location of the cooling system maintains efficient engine operating temperatures and provides better front visibility for the operator. Hinged radiator hoods make it a simple matter to change a fan belt or to service the radiator.

ACCESSIBILITY

Unitized assemblies are all easy to get at—they can be removed or serviced without tearing down other parts. Accessibility of all major components that can't be equalled in any other crawler—keeps downtime to a minimum. All lubrication fittings and check points are located for easy servicing—fuel tanks have ample capacity for full shift operation.

SPECIFICATIONS

total h.p.—388 h.p. at rated speed
available for tractive effort—365 h.p.
speeds—3 speed ranges forward and reverse to 8.3 mph
drawbar pull (bare tractor)—forward and reverse—
54,000 lbs. low range
53,500 lbs. intermediate
53,000 lbs. high range

track width (standard shoe)	26″	track gauge	110″
overall width	11′ 4″	overall length	16′ 2″
height (excluding stacks)	7′ 11″	drawbar height	23″
ground clearance	20″	operating weight (bare)	approx. 58,000 lbs.

EUCLID THE PIONEER

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

GM GENERAL MOTORS

3

PROVED HELPS

for better

PROFIT MARGINS

To give you better, faster, lowest-cost fastening into steel and concrete, RAMSET SYSTEM provides this practical 3-way combination:

1. The versatile RAMSET Jobmaster Tools and Fasteners
2. The ingenuity and skill of RAMSET PROFIT ENGINEERS
3. New *How-to-do-it Application Data.*

These add up to the most powerful help to reduce your costs and increase your Profit Margins. To get the benefit of this complete, exclusive service, just call your local RAMSET dealer or mail the coupon.

Listed under re-examination service of Underwriters' Laboratories, Inc.

Ramset Fasteners, INC.

RAMSET DIVISION, OLIN MATHIESON CHEMICAL CORPORATION
12107 BEREA ROAD • CLEVELAND 11, OHIO

Please send us profit-making RAMSET How-to-do-it Application Data for
☐ general construction ☐ electrical ☐ plumbing ☐ plant maintenance

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

News Briefs . . .

Tunnel Teamwork

A combine of four construction firms has submitted the low bid of $12.7 million for 6 mi of water tunnels to connect Chicago's central district filtration plant with the city's water system. The firms are: Grafe-Callahan Construction Co.; Mittry Contractors; Tecon Corp.; and Johnson, Drake & Piper, Inc. The $85-million, 950-mgd plant will be built on Lake Michigan just north of Navy pier (ENR June 3, 1954, p. 23).

State Institution

Construction of a new State School for Mentally Retarded Children will get under way next year on a 500 to 600-acre site in West Seneca, a suburb of Buffalo, N. Y. The institution, expected to cost more than $33 million, will be designed for the care and training of 2,400 children. It will be operated by the State Mental Hygiene Department and will be made to serve the eight counties of western New York.

Penn Center Hotel

McCloskey & Co. has started work on the second large building slated for Philadelphia's Penn Center—the $14-million, 22-story Sheraton Hotel. It will occupy a site on the north side of Pennsylvania Blvd., between 17th and 18th Sts. The center's first building, a 20-story office skyscraper built by Uris Bros., now is ready for occupancy. Within a few months the development's third structure—a transportation building—will be under construction south of the hotel.

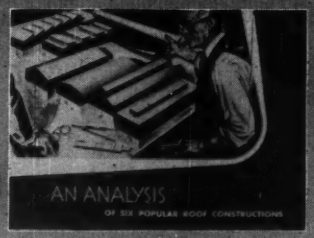
Two More Expressways

Design contracts have been awarded for two arterial expressway projects in Buffalo, N. Y. Kensington Expressway will be designed by DeLeuw, Cather & Brill of New York City, and Scajaquada Creek Expressway will be designed by William H. McFarland of Binghamton, N. Y. Cost of the two projects will total $14 million.

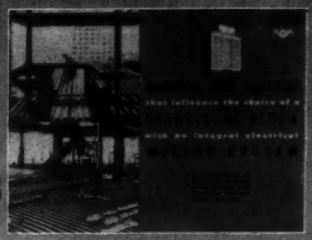
County Courthouse

The new $15-million Los Angeles County Courthouse is scheduled for an August 15 construction start. The 7-story building is expected to take about two years to complete. Design and engineering will be handled by J. E. Stanton, Paul Williams, Adrian Wilson, and Austin, Field & Fry Associates.

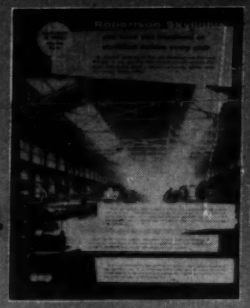
1



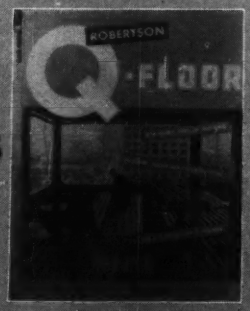
2



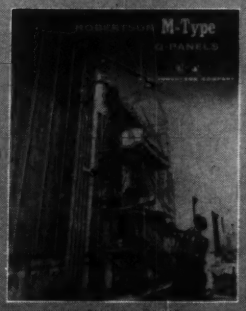
3



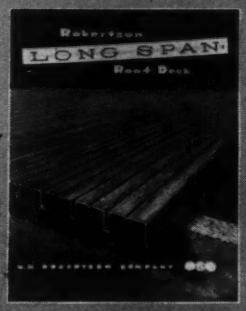
4



5



6



7

8

Write- for these free books from Robertson's technical library

1. Acoustical Data on Q-Deck: It has long been known that the fluted underside of steel deck provides some acoustical value, yet demand for more has led to this new low-cost method. Application details and test data are included.

2. An Analysis of Industrial Roof Construction: This valuable booklet compares all the better-known roof types (flat, monitor, bow-string, high-low bay, saw tooth) on the basis of structural steel, volume, roofing, sash area, flashing, ventilation and daylighting.

3. Design and Cost Factors of Structural Floor Wiring: This study compares Q-Floor with other conventional floor systems using underfloor duct. Based upon a typical multi-story building, the book is replete with charts and cost analyses of all structural components.

4. Daylighting Cost Analysis: This new and unusual study contains a questionnaire, which when properly filled out will reveal how quickly scientifically planned natural daylighting will pay for itself in a structure through savings in electricity. All data are substantiated.

5. New Composite Q-Floor Catalog: This newly revised catalog contains many examples of the latest Q-Floor buildings and a full exposition of Q-Floor advantages. Structural details and specifications are more complete than ever before.

6. New M-Type Q-Panel Catalog: Recent newcomer to the Robertson product family is the M-Type Q-Panel which possesses unique advantages over other types of modern curtain wall construction. The book contains 3 pages of structural details plus complete specifications.

7. New Long-Span Q-Deck Catalog: Another new Robertson product is this sturdy, yet exceptionally long-span deck. Easy to handle and erect despite its length up to 32 feet, it is especially designed for schools and supermarkets and other structures in which unbroken spans and a saving of structural steel is beneficial.

8. Ventilation Engineering Booklet: More than a ventilator catalog, this booklet not only describes products, but contains detailed tables of exhaust capacities, based upon average wind velocities, temperature differences and height above intake. Use the coupon below.

Robertson Products

for modern buildings

H. H. Robertson Company
2420 Farmers Bank Building, Pittsburgh 22, Pa.
In England: Robertson Thain Ltd., Ellesmere Port, Cheshire
In Canada: Robertson-Irwin Ltd., Hamilton, Ontario
Offices in Principal Cities

Please send the free data book(s) I have circled below.

1 2 3 4 5 6 7 8

NAME _____

FIRM _____

ADDRESS _____

New York's Thruway Fights Rock to the End

No matter where consideration of the southern 50 miles of New York State's Thruway starts, end is always rock.

To be sure, there's every variety of condition that a contractor or engineer could imagine for any combination of highway jobs: Earthmoving, swamp, building through congested city areas, bridges, culverts, hillside cuts, railroad crossings.

But in any discussion of the section and the work involved in it, the major consideration has to come back to the millions of cubic yards of granite and basalt that have to be moved from the path of the road. And to the problems —including public relations attendant on blasting—that go with such a task.

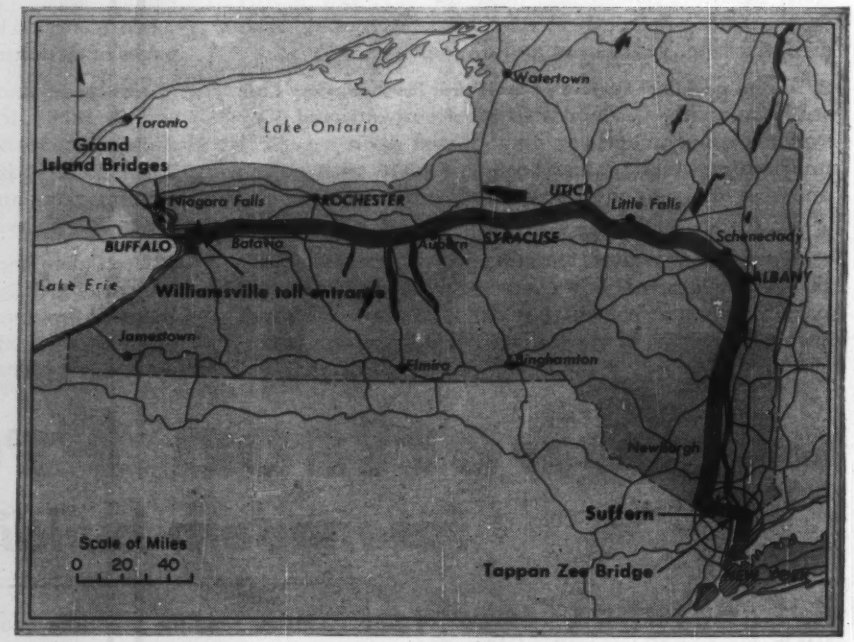
• **End in sight**—The end of New York State's 427 mile adventure in construction of a superhighway from New York City to Buffalo is coming in sight (ENR June 17, 1954, p. 30).

Already, a 395 mile section, cutting nearly straight from west to east across the state from Buffalo to Albany, and then swinging southward nearly to the small city of Suffern, is open to traffic—even though some construction equipment is still at work trimming banks, cleaning up, making minor final adjustments.

The great bridge that will enable the Thruway to leap 16,000 ft from the west to the east shore of the Hudson River between Nyack and Tarrytown has all of the approach steelwork in place, workmen are moving fast on the main cantilever span, and paving of the approach spans has already started.

On a progressive schedule, the remaining sections of the Thruway are expected to be put into full operating use by the end of this year, with the possible exception of about three miles of the toll-free section at the extreme southern end.

• **Still tough**—But because the end is in sight doesn't mean that the tough



BISECTING THE STATE, Thruway is open to traffic now excepting for area circled (lower right)—and that's still a tough construction job.

part of the job is behind the road-builders.

Take, for example, the 2.7 mile section that a joint venture of Edward A. Petrillo and Corbetta Construction Co. is building, from the New York-Yonkers city line northward to a point near Westchester County's Cross-County Parkway.

It'll cost the state $15.4 million to build this section—and if you believe a concensus of other contractors, that's not a penny high. Consider the problems:

The thruway route snakes back and forth over a main local traffic artery —Central Avenue—on which traffic that approaches 8,000 vehicles per hour in peak times must be maintained.

Like most such jobs through heavily built up urban areas, the site bristles with a maze of utilities that include Consolidated Edison's 138-kv line which is main power source for most of Westchester County; numerous storm and sanitary sewers; crisscrossing water and gas lines and other services.

Near the northern end of the job there was a sizeable swamp—so big that something like 400,000 cu yd of peat-moss and muck had to be removed and replaced with sound fill, and through the middle of this swamp area goes one of the biggest of the Thruway intersections—that between the heavily-traveled Cross County Parkway, the Thruway, Central avenue, and local roads serving one of the largest suburban shopping centers in the U. S.

And cutting across the route at many points lies the rock that must be blasted and hauled away. This has to be accomplished without unduly disturbing the occupants of houses and business properties that form a thick border on both sides of the working area.

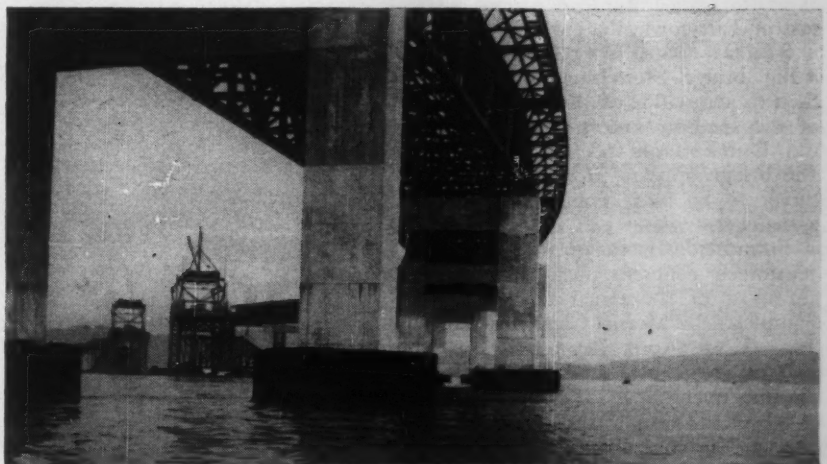
As an example of just how tough this kind of work can be take a trench that will be several hundred feet long, 4 ft wide, 18 ft deep. Progress is being maintained at the rate of 5 ft per week. The reason: The trench must be cut out within 5 ft of an existing six-story apartment house and other structures, is within a few feet of an older trench carrying the 138 kv line, within 40 in. of a water line, 24 in. of a sanitary sewer. The solid granite of the area must be blasted out almost at the safe, but time-consuming, rate of one stick of explosive at a time.

The toll highway itself alternately dives under or climbs over existing local arteries throughout the section, so that, in addition to the blasting necessary, there is considerable concrete work to be done in the form

Variety Spices Contractor's Life . . .

BRIDGE WORK is a commonplace as route crosses local roads. Thruway crosses on top of this one, Tuckahoe Road below. Simple girder spans and architecturally plain reinforced-concrete piers are typical.

COMPLICATED INTERSECTIONS are another part of the story. This one, in Yonkers, has Cross-County Parkway, foreground, its width being doubled, crossing the Thruway and Central Avenue, with connections to shopping center (right) over former swamp.



MAJOR BRIDGE is the 16,000-ft crossing of the Tappan Zee, Hudson River's widest point. Truss girder spans for approach structure are all in place and the travellers erected for main cantilever span over 1,000-ft river channel.

of retaining walls, bridges and culverts.

And an idea of the enormous amount of equipment needed for such a complex job can be drawn from the fact that Petrillo-Corbetta is now operating something more than 75 separate machines on this short stretch of road. The list includes: 6 backhoes; 5 shovels; 8 truck cranes, 10 dozers, 2 automatic loaders, 1 patrol grader, 19 compressors, 23 12-yd bottom dump trucks, 4 repair trucks, 26 wagon drills, 13 end-dump trucks, a sheepsfoot roller, 19 pumps, 22 jackhammers, numerous service vehicles—and even a rowboat.

• **Open country**—Moving northward, the route begins to break into more open country, skirting through the rolling, rocky, wooded Westchester hills between and around the suburban villages of Hastings-On-Hudson, Ardsley and Elmsford to a point where it swings nearly due west to meet the Hudson River and the new bridge just south of Tarrytown.

In this 12-mile stretch, there are no less than nine major bridges crossing local traffic arteries, one major interchange (at Tuckahoe Road), the toll plaza for the bridge at Tarrytown, a huge swampy area just to the east of the river-borderhills—and endless rock.

The grading and paving contractors—L. G. DeFelice & Son Inc. and C. J. Lagenfelder & Son Inc.—are nearing the end of their grading job now, some sections are ready for final grade and paving. But the job has involved some immense rock cuts, as deep as 90 ft, the removal of more than 1,300,000 cu yd of rock and hauling of this rock a distance of several miles to fill in the swampy area along the course of a small stream just east of Tarrytown.

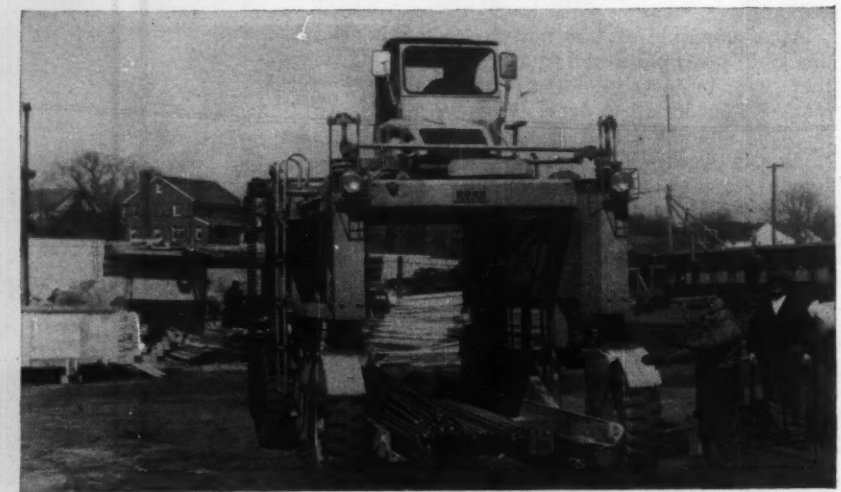
• **Big bridge**—Stretching in a great S-curve across one of the widest parts of the Hudson—known locally by its old Dutch name of Tappan Zee—the bridge appears to the casual observer to be more complete than it actually is.

Foundation work on the endless reinforced concrete piers that make up most of the structure has been completed by Merritt-Chapman-Scott, Inc. (ENR April 14, p. 44), with M-C-S crews now engaged in final cleanup operations.

All of the simple truss girders making up the long approaches are also in place, and, on the west side of the river, a joint venture of Garafano Construction Co. Inc., West Shore Co. Inc. and Euclid Contracting

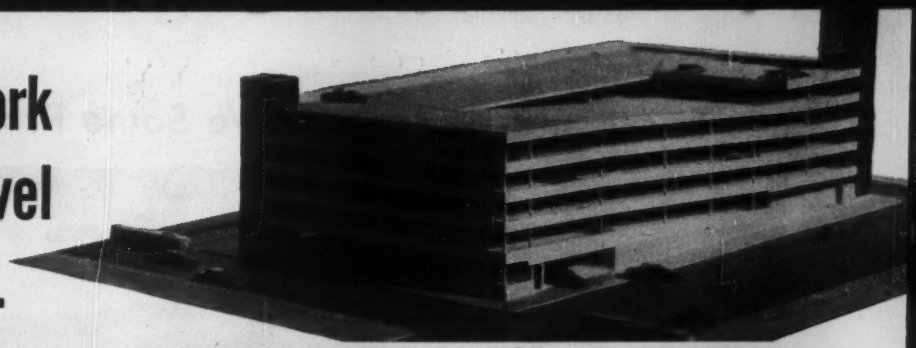
SLOPE PLANER—Contractors converted a worn pair of crawler tracks, plus a length of steel cable, into a device for levelling off slopes on deep cut through one of few areas where loose earth is the material.

CONCRETING TRAIN—Train of three machines—screed, finisher, planer—follows paving rig. Three-piece treatment reduces amount of hand finishing necessary on final paving of roadway slabs.



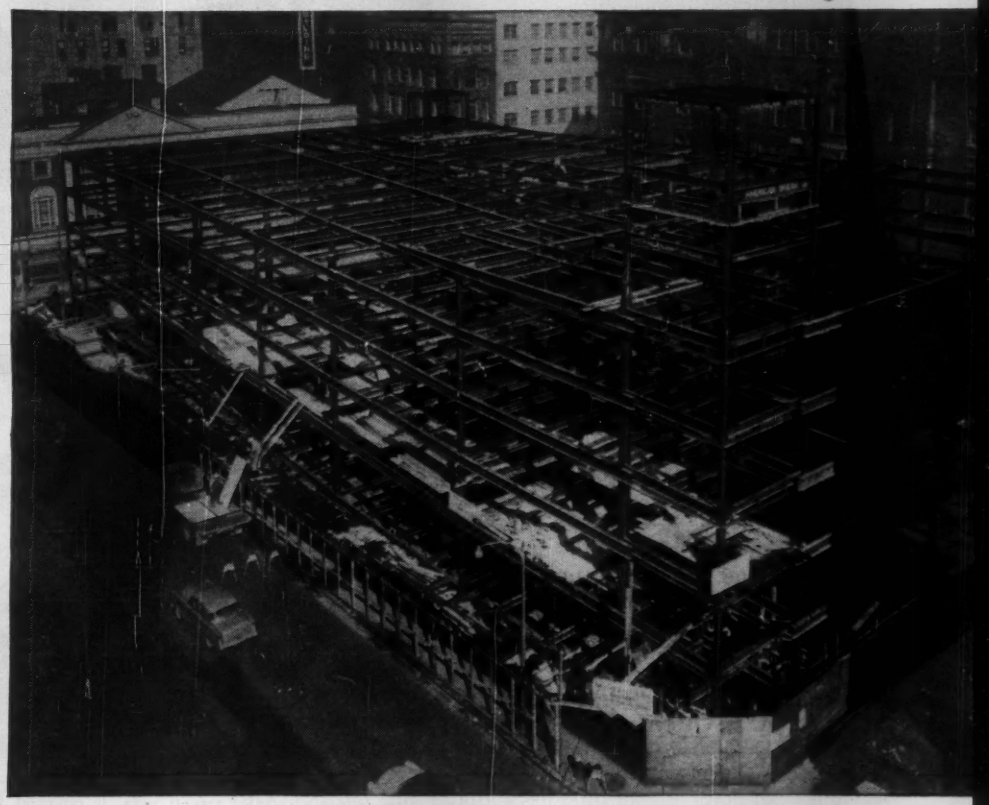
PALLET CARRIER—By simply placing 4x4's, Corbetta-Petrillo converts straddle truck to pallet carrier. Device is used to move equipment, supplies around job; requires no cranes, material can be moved in batches at convenience.

700 Tons of Steelwork for this unique 6-level rampless garage....



ERECTED IN JUST 5 WEEKS!

Allies Parking Garage
Public Parking Authority of Pittsburgh, Pa.
Planning Consultant:
Ramp Buildings Corporation
General Contractor:
Ragnar Benson, Inc.
Designed by:
Hoffman and Crumpton, A.I.A.
Leland W. Cook, Structural Engineer
Structural Steelwork by:
AMERICAN BRIDGE
Building is 6 levels, 120′ wide x 220′ long.
Erection of steelwork began Feb. 4, 1955, completed March 11, 1955.



Using high tensile bolts for field connections, AMERICAN BRIDGE makes quiet, speedy work of large mid-town structure

The Parking Authority of the City of Pittsburgh is answering the demand for new and better parking facilities by building one of the most unusual structures of its type to be found anywhere.

And by using steel-frame construction *field connected with high strength bolts*, the job is being handled so speedily and so quietly that folks on the street and in neighboring buildings are scarcely aware that a big new building is being constructed in their midst.

Erection started February 4, 1955 and was completed March 11, 1955 — an elapsed time of just 5 weeks!

Located on the corner of the broad Boulevard of the Allies and busy Smithfield Street in the heart of the Golden Triangle, the new garage is 120′ wide x 220′ long with six levels for drive-in parking. *The slightly tilted floors do away entirely with ordinary ramps.* It is designed with a center section 120′ x 125′ on slope and two level end sections 120′ x 47′6″. All connections were made with high tensile bolts. The 700 tons of structural steel framework was fabricated and erected by American Bridge.

The fast, uninterrupted and unusually quiet erection of this modern parking garage provides another strong argument in favor of steel-frame construction and *bolted field connections* for buildings of any type and size. For American Bridge crewmen can make tight connections with high-strength bolts as efficiently and speedily as less skilled personnel can handle the more common methods.

For detailed information regarding your requirements, please contact the office nearest you. Our engineers welcome an opportunity to confer with you.

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.

Contracting Offices in: AMBRIDGE • ATLANTA • BALTIMORE • BIRMINGHAM • BOSTON • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DENVER • DETROIT • ELMIRA • GARY MEMPHIS • MINNEAPOLIS • NEW YORK • PHILADELPHIA • PITTSBURGH • PORTLAND, ORE. • ROANOKE • ST. LOUIS • SAN FRANCISCO • TRENTON UNITED STATES STEEL EXPORT COMPANY, NEW YORK

AMERICAN BRIDGE

USS

UNITED STATES STEEL

Corp. is already well out over the stream with paving of the six-lane reinforced concrete roadway that the bridge will carry.

At the center, over the 1,000-ft wide channel maintained in the river, American Bridge Co. crews under D. K. Young, project engineer are working on a 60-hour-week schedule to erect the main, 1,212 ft cantilever span. Travellers have been erected atop the two main piers (which are of steel, rather than concrete), and these, riding atop temporary construction spans, are beginning erection of the actual crossing.

• **Uphill work**—Cutting in between the communities of South Nyack and Nyack at the western terminus of the bridge, the Thruway climbs right through the striated basalt, sandstone and granite of the steep-sided cliffs (the Palisades) at this point, through four complex traffic interchanges, to head westward toward Suffern.

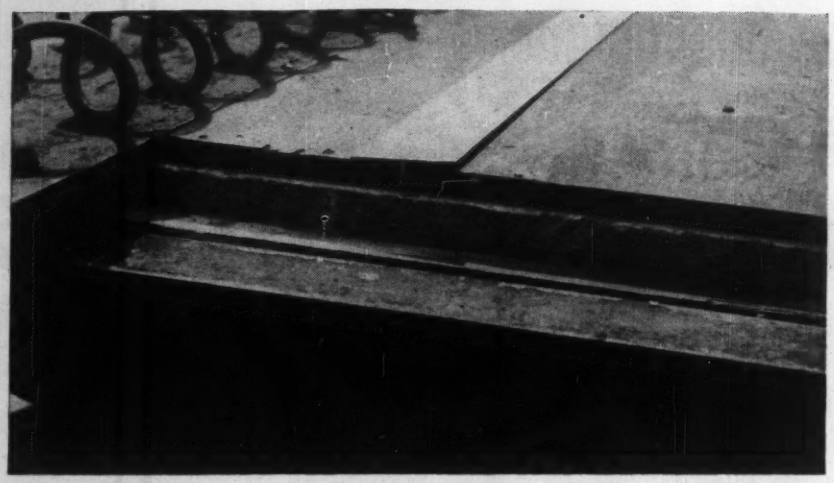
These four interchanges—all within a distance of about four miles—include the South Nyack interchange which connects with local streets and New Jersey Route 9 W, a principal north-south traffic artery; the Nyack exchange also with 9W; and intersection with State Route 303 in West Nyack, and an intersection further west with the Palisades Interstate Parkway.

From the intersection with 9 W in Nyack to Suffern three contractors are busily engaged in grading and paving work. A. E. Ottaviano has 4.52 miles, L. G. De Felice 7.96 miles, and the Klevens Corp. is finishing a 900-ft long cantilever bridge on a skew that crosses the main line of the Erie Railroad and the marshalling yard plus Route 59 in Suffern.

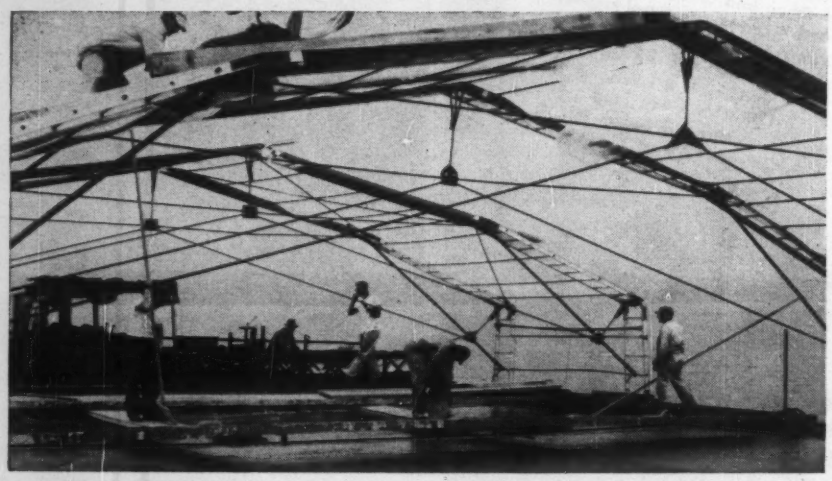
South of the opened section of the Thruway, the firm of Mt. Vernon, Healy and Gammino are constructing the most complicated interchange in the area in addition to 1.89 miles of the Thruway. Seven bridges, ranging from 58 ft to 788 ft in length, are included in this contract and Thruway engineers expect that this interchange, connecting to heavily travelled Route 17 at the New Jersey line will be ready for use by early fall.

One of the Thruway's major toll collection points also will be located at Suffern, where New York Route 17 parallels the new road several miles. Work is going ahead on this toll plaza.

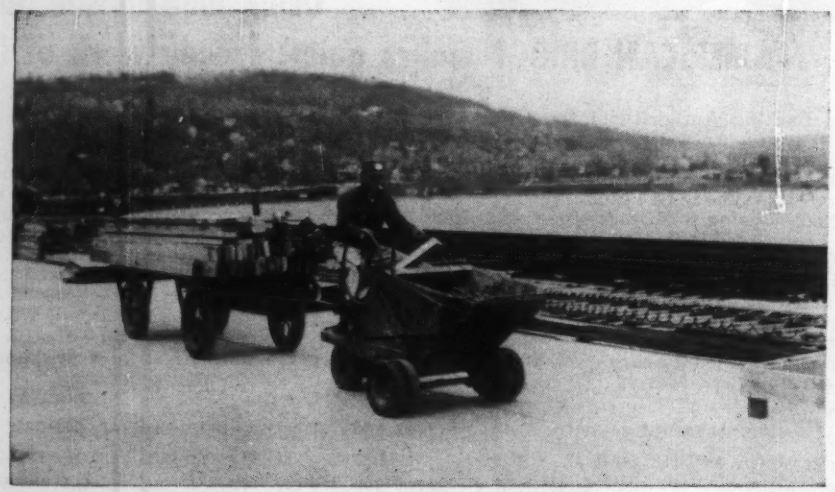
The newest section of the toll road opened to travel by the general public is that from just north of the Suffern interchange and toll plaza, northward to the previous terminus at Harriman.



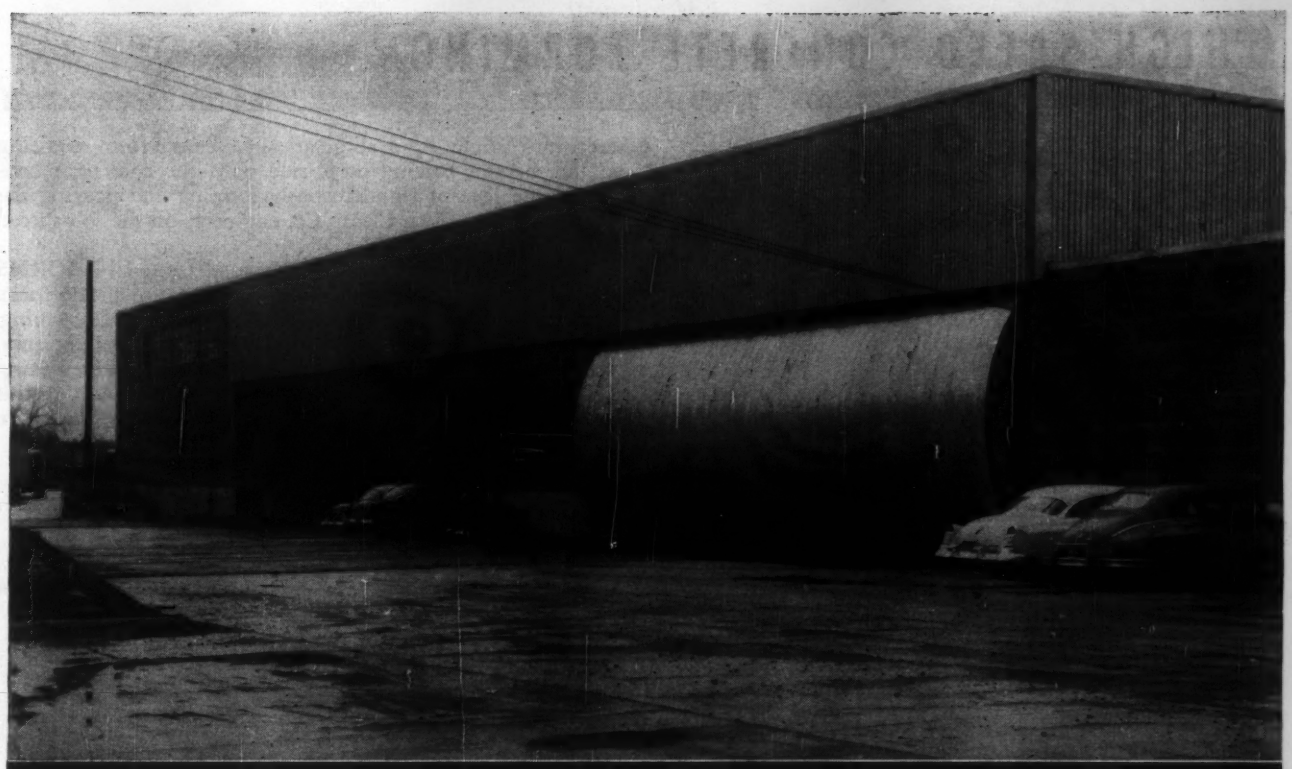
FORM FILLER—Because spaces for forms on Tappan Zee bridge vary slightly, Garafano-West Shore-Euclid, paving contractors, made themselves lightweight magnesium strips, cut all plywood to standard widths, dropped strips in to fill gaps.



CONCRETE COVER—To protect bridge paving from summer rain squalls, lightweight pipe frame straddles paved area, is covered by clear plastic. High winds in open area make placement of cover tricky.



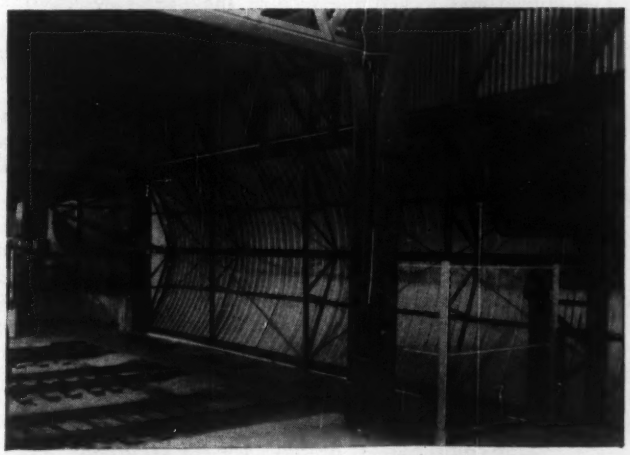
PRIME MOVER—With the help of job-made, rubber-tired dollies, powered concrete buggies serve bridge contractor as prime movers for all material, as well as performing their normal functions.



ALUMINUM FEATURES STAND OUT ON NEW BURLINGTON FREIGHT TERMINAL

Nearly half a million square feet under roof, including two miles of track, and completely enclosed—that's the Burlington's new freight house at Cicero, Illinois. Incorporating some of the latest innovations in design, materials and equipment, it is 275 x 1400′ in plan.

Aluminum industrial building panels were used to sheathe the parapet walls enclosing the upper part of the building. The special hangar-type doors for the two 54 x 17′ track openings are covered with Alcoa Curved Corrugated Industrial Sheet. Fenestration consists of Alcoa® Aluminum projected sash along all outside walls.



These Alcoa Aluminum Industrial Building Materials were chosen because of their low initial cost, ease of installation and minimum maintenance requirements. Advanced in design today, they'll be modern tomorrow —and every day of their extra-long life.

For complete information on these construction cost-cutters call your local Alcoa sales office. Or write for your copy of our A. I. A. File on Alcoa Aluminum Industrial Building Products. Aluminum Company of America, 860-F Alcoa Building, Mellon Square, Pittsburgh 19, Pennsylvania.

Your Guide to Aluminum Value

INDUSTRIAL BUILDING PRODUCTS MADE OF

ALCOA ALUMINUM

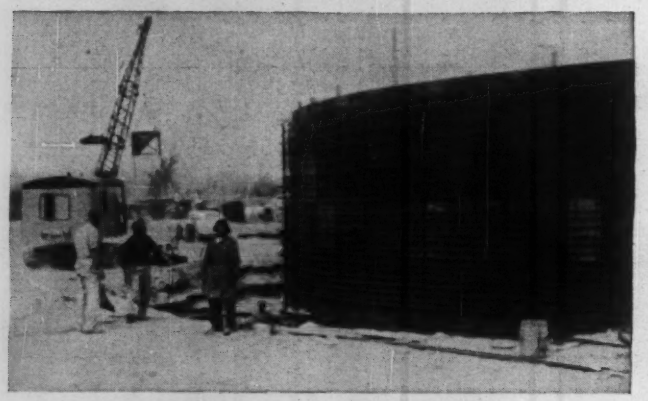
ALUMINUM COMPANY OF AMERICA

©ACOA

(Advertisement)

HIGH SPEED CONCRETE FORMING

Form and Pour 75 ft. diameter tank 26 ft. high in 8 hours!



9:30 am POURING started at 8:00 am. Here is 6 ft of concrete in place.

How a contractor formed and poured a circular tank 75 ft. in diameter with walls 26 ft. high and 14 inches thick in 8 hours, with maximum economy makes the concrete forming speed story of the year.

The tank was formed and poured by the contractor, C. H. Leavell & Co., El Paso, Texas, in record time, and a tough

11:30 am FORMING AND POURING were in full production at the 10-ft level.

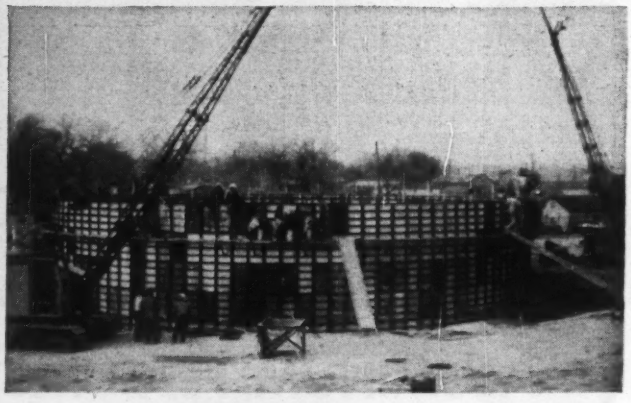
forming specification limiting maximum free drop of concrete to 4 ft. was rigidly adhered to.

UNI-FORM Concrete Forms — the prefabricated, ready to use form panels — were used on the job. Because UNI-FORMS

4:00 pm POURING at 22-ft level. Scaffold setters on final placement.

erect into a tight, rigid, automatically accurate form requiring alignment and bracing on 1 side only, the contractor conceived the idea of simultaneously forming and pouring the wall. Universal Form Clamp Co. engineers on the job agreed that the plan was feasible.

Rigidity of the steel-framed, plywood faced UNI-FORMS permitted fast, non-stop erection of the entire inside form. This permitted setting of reinforcing steel, outside forming, and concrete placement to proceed with maximum efficiency, speed and safety. The outside of the tank was formed using 5 lifts of 4 ft. and 2 lifts of 3 ft. UNI-FORM Panels. In this way, the concrete never dropped more than the specified 4 ft. below the height of the outside form.



4:45 pm UNI-FORMS now completed.

5:15 pm Final concrete poured.

As successive pours were completed, the outside form was closed by setting the UNI-FORM Panels in place and locking them to the projecting UNI-FORM Ties. UNI-FORM Circular Wall Fillers, which member with UNI-FORM Panels, permitted forming the curve of the wall to specifications. Automatically accurate wall widths were insured, as the UNI-FORM Ties spread and locked the face of the Panels exactly 14" apart. UNI-FORM Scaffold Brackets, which fasten directly to the steel UNI-FORM frame, provided fast, low cost scaffolding.

The result? Under the capable direction of job superintendent Paul Nigh and project manager N. J. Riebe — fast, low cost forming and pouring — an accurate, smooth faced wall with true curvature.

UNI-FORM Panels are versatile, high speed forming tools. They're used by the country's most successful contractors to form every conceivable type of construction. They are rented or sold . . . or rented with purchase option. Universal Distributors and Branches are located from Coast-to-coast. Write for UNI-FORM Catalog and complete details on UNI-FORMING — the *modern* way to form concrete.

UNIVERSAL FORM CLAMP CO.
1238 North Kostner Avenue • Chicago 51, Illinois

SEWAGE WORKS TAKES SHAPE on Miami's Virginia Key. Ample area of raised land stretches from bay to ocean (background).

Island Swamp Makes Ideal Sewage Works Site

Miami, Florida, is trading 60 acres of real estate for a cleaned up Biscayne Bay. Thrown in to boot is some $27 million worth of construction.

Real estate is generally precious to this playground city; but precious, too, are waters of the bay on which it fronts. Across this bay, on Virginia Key, a 47-mgd treatment plant and outfall to the ocean are some two-thirds completed.

Sewage that now discharges into the shallow bay (five to six ft is average high-tide depth) from 70 outlets on its shores and on the Miami and Little rivers will by late 1956 get secondary treatment and go to the ocean, chlorinated effluent with 80% of its pollution load removed. Miami will have made its waterfront more completely wholesome rather than attractive only when viewed at a distance.

The site the city traded for much-needed sewage treatment was mostly mangrove swamp on the north end of Virginia Key, one of the three stepping stones off the south end of Miami Beach. (Fishers Island is to the north; Key Biscayne, south). It was a tough site for the contractor when the plant work first began, though ideal now.

J. Y. Gooch, project manager for Paul Smith Construction Co., Miami, recalls that a solid footing was hard to find when he first moved in. He recalls also that the construction job was many weeks without telephone connection with civilization, although not more than three miles across the bay from the center of Miami. This had disadvantages—and admitted advantages.

Arundel Corp. of Baltimore dredged in 590,000 cu yd of bay-bottom sand to build the site up to grade. Grade is generally 10 ft above normal mean high water; the designers hope that at least 1½-ft freeboard will remain over the site, even in the worst hurricane tide.

• **Fill on Swamp**—In raising the site with fill, the contractors covered over mangrove roots and muck; neither were removed. Through the fill, mud and roots, some treated timber piles were driven to the limerock, an average of 16 ft below, and all structures were built on piles. The buried swamp vegetation gives no foundation problem, but the high-sulphide swamp water is corrosive to pumps and valves and in any dewatering about the site.

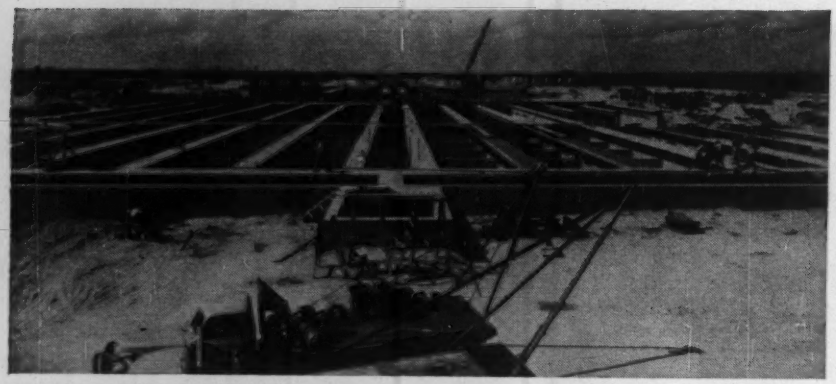
Location of the plant makes its water supply a problem. Fresh water for Virginia Key must be tapped from the 12-in. main a developer laid through from Miami to the southernmost Key Biscayne. Miami's newly completed Southwest waterworks boosts pressure in this main, permitting a 4-in. branch to the Virginia Key sewage works without net loss in pressure to residential Key Biscayne. The branch leads to a 100,000-gal elevated tank.

This fresh water supply is but a small part of what the plant will use. It will rely on its own effluent as a water supply to a greater degree than do most plants. High and low pressure system will carry chlorinated plant effluent to every use except potable supply.

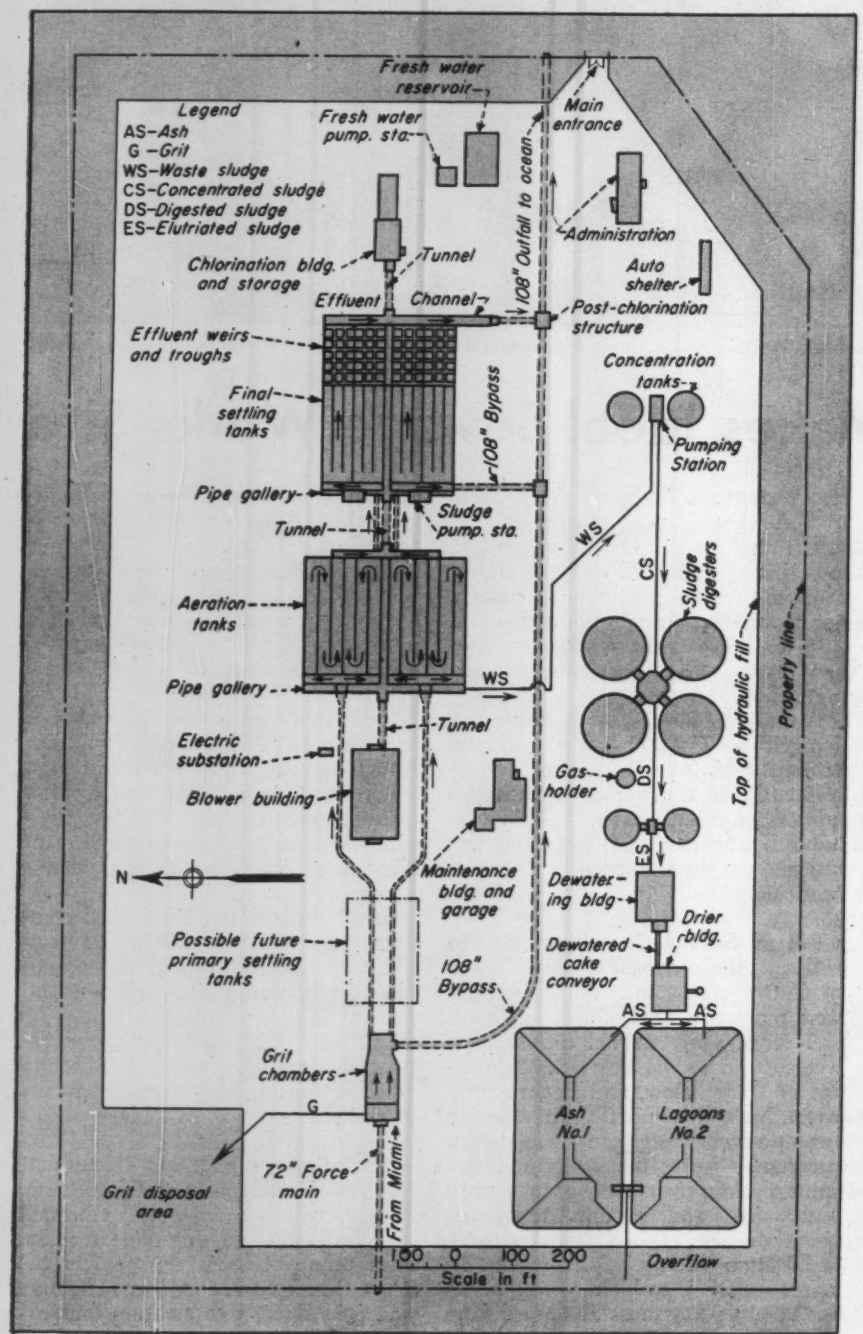
Since the site has been filled completely and the two-mile access road to it has been finished, this island mangrove swamp has become an almost ideal construction site. Its ample area, high and dry above natural grade makes room for orderly construction on well spaced elements of the plant.

• **No primary treatment**—Treatment for Miami's relatively weak domestic sewage will be high-rate activated sludge. With screening done at mainland pump stations, flow enters the plant through an aerated grit chamber and goes directly to aeration tanks.

Primary settling has been omitted



THE SITE'S THE THING—Near-perfect rectangular area of built-up land made possible near-ideal plant layout. Constructors of Virginia Key plant have space to spare.



in this design—partly because the sewage is weak (dilute from infiltration in the city's 200 miles of separate, sanitary sewers) and partly because of the relatively high temperature of the sewage (it would easily go septic). With no primary sludge to digest, gas production is reduced; but the additional diesel fuel required for the plant's dual-fuel engines is more than balanced by the savings in omitting primary treatment.

Whereas plants commonly are expanded by adding secondary to primary treatment, this Virginia Key plant may some day add primary to secondary. This will not be soon; the plant is designed for a permanent population of 330,000 anticipated for 1964 or '65. It will then handle peak flows up to 84 mgd.

• **Out-fall to ocean**—Plant effluent with 25 ppm suspended solids and 20 ppm of BOD will be chlorinated and discharged through a 1,700-ft, 108-in. concrete pipe to shore, then 4,500 ft offshore in a 90-in. line to ocean dispersion at a 20-ft depth. The ocean here gets no deeper than 25 ft up to four miles out.

Outfall construction by Diamond Construction Co. of Savannah, Ga., is progressing with no special problems encountered. The surf here is not normally rough, due to protection of offshore shoals, and the contractor is building, breaching and extending a dike around his work as he progresses.

Laying the 3-mile force main that will deliver sewage across Biscayne Bay to the plant was a smoother job. It was rushed to completion between January and July (1954) by Merritt-Chapman & Scott, before winds of late summer began (ENR June 17, 1954, p. 54).

The force main cost about $2 million; the plant will cost just over $9 million; the outfall, $1.6 million. The rest of a $27 million bond issue goes into interceptors and pumping stations in Miami.

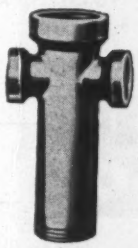
The work is a project of the Department of Water and Sewers of the City of Miami, W. A. Glass, director. Metcalf & Eddy of Boston; Maurice H. Connell and Associates, Inc. of Miami and Rader-Knappen-Tippetts (now Rader Engineering Co.) of Miami cooperated in the design. Now a combination of Maurice H. Connell and Associates, Inc. and Rader Engineering Co. are supervising the construction of the interceptors, pumping stations and bay crossing, with W. R. Boyd, their resident engineer. Metcalf & Eddy are supervising construction of the treatment plant and outfall and their resident engineer is Ben Harig.

CLAY PIPE will serve 10,000 *NEW* Homes in Los Angeles Community

Clay Pipe will be installed by the mile during the next 10 years to serve a $200 million community planned for the Palos Verdes Peninsula. The first subdivision alone, which is within a mile of the Pacific Ocean, requires nearly 10,000 feet of Clay Pipe. Ronald W. Bishop, City Engineer of Torrance, Calif., is in charge of the initial project, and the Colich Construction Co. are the sewerage contractors. Clay Pipe is being used exclusively on this project.

Wherever you see men and machines preparing the vital underground arteries of a modern pre-planned community . . . look for Vitrified Clay Pipe. The "old-timers" in the construction business have always used it . . . and progressive new engineers and contractors are discovering that there's no safe substitute for Clay Pipe. It's completely unaffected by the corrosive action of sewer acids and gases. Detergents can't soften it. Caustic drain-cleaning compounds can't weaken it. Heavy backfill loads can't cause it to oval or squash out. And a wide variety of joint designs and jointing methods insure fast installation and tight, permanently root-proof joints. Always specify Vitrified Clay Pipe. It's guaranteed for half a century!

CLAY PIPE FITTINGS SPEED INSTALLATION



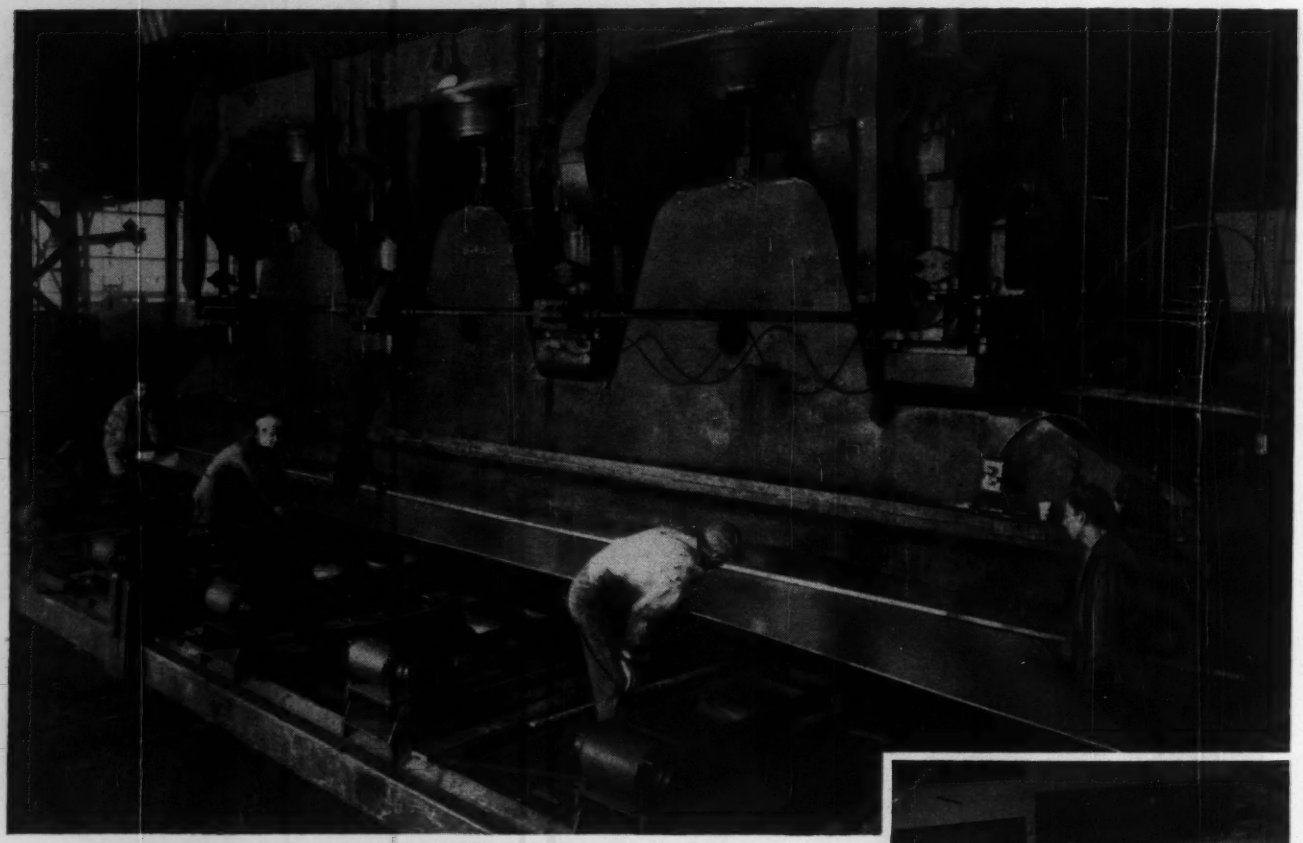
You can always get fittings to match when you install Vitrified Clay Pipe. This Double T Branch, for example, is one of the many Vitrified Clay Fittings that make possible the utmost in flexibility and speed of installation.

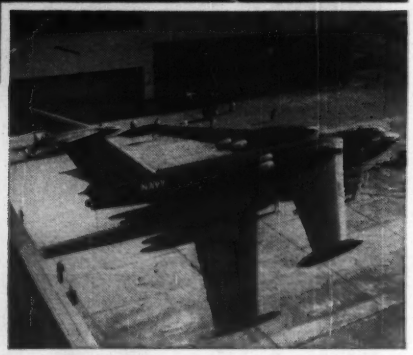
Vitrified
CLAY
CLAY PIPE NEVER WEARS OUT!
PIPE

NATIONAL CLAY PIPE MANUFACTURERS, INC.
1520 18th St. N.W., Washington 6, D. C.

206 Connally Bldg., Atlanta 3, Ga.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio

B-555-1





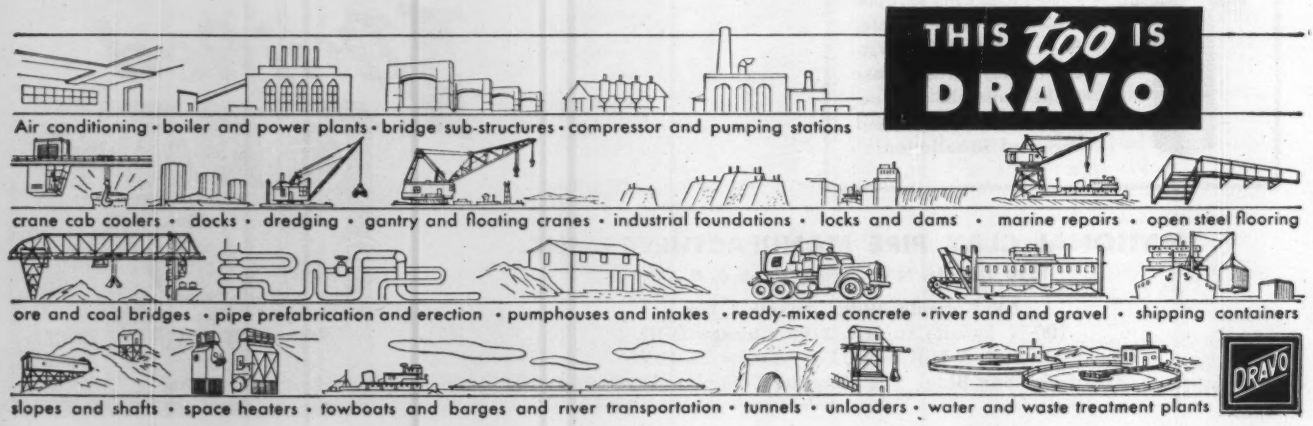
Skin specialists at work!

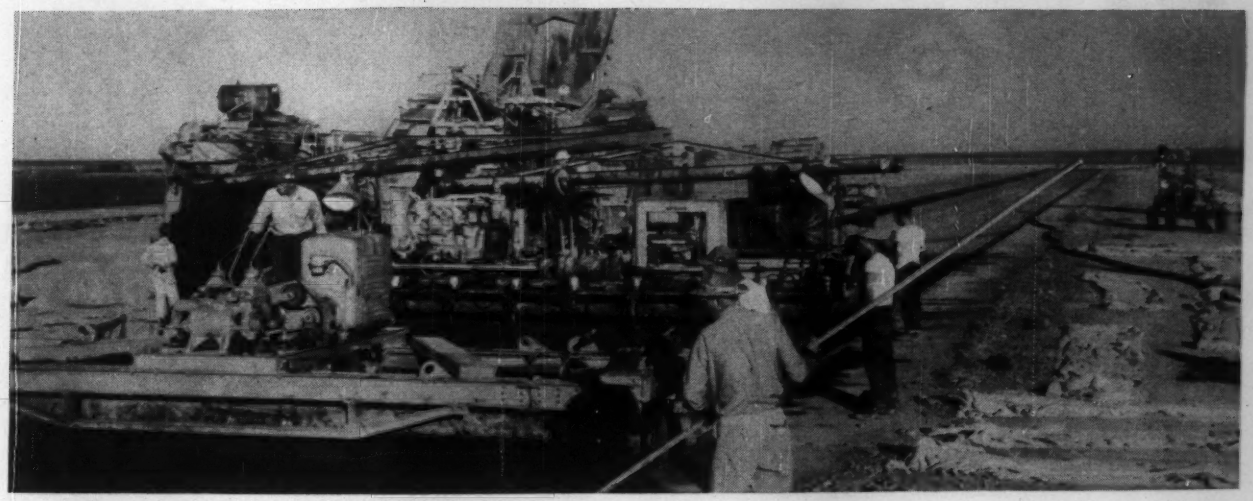
These Dravo men are forming a special wing skin for the nation's newest weapon of the sky—the Martin SeaMaster. It was a precise job, shaping 36-foot long aluminum plates to an accuracy tolerance of three-hundredths of an inch. Although these wing sections tapered from a half inch to a quarter inch thickness along their length, the delicate job was performed by Dravo's 1000-ton press brake without using special dies.

The world's first multi-jet attack seaplane, the XP6M-1 Martin SeaMaster is designed to cruise at 40,000 feet and operate at speeds in excess of 600 miles per hour. Planned for mine laying and photo missions, the SeaMaster can remain in flight for long periods, operate in high waves and engage in many combat tasks . . . conditions that require high structural strength.

In calling on Dravo's extensive fabricating and machine shop facilities, The Martin Company followed the example of many industrial firms and government agencies which have used these services. Typical projects have included floating caissons, process equipment, wind tunnel sections and carriages for atomic cannon.

For more than 60 years Dravo has been serving business and industry in many engineering fields, with customer satisfaction always an essential aim in every transaction. DRAVO CORPORATION, PITTSBURGH 25, PENNA.


THIS too IS
DRAVO
Air conditioning • boiler and power plants • bridge sub-structures • compressor and pumping stations
crane cab coolers • docks • dredging • gantry and floating cranes • industrial foundations • locks and dams • marine repairs • open steel flooring
ore and coal bridges • pipe prefabrication and erection • pumphouses and intakes • ready-mixed concrete • river sand and gravel • shipping containers
slopes and shafts • space heaters • towboats and barges and river transportation • tunnels • unloaders • water and waste treatment plants
DRAVO



THE CONCRETE PAVING operation lays down a 16-in. depth of slab. Concrete mixer (top center) runs in adjacent 25-ft lane.

Outmoded Airbase Reconditioned For the Strategic Air Command

George T. Buchmeier
Lt. Colonel, USAF

A training base of World War II vintage at Mountain Home, Idaho, whose usefulness as a major Air Force installation was in question, is rapidly being converted into a base that is adequate for use by the big B-47 jet bombers of the Strategic Air Command. This reconditioning, at a cost of $7.5 million, consists in large part of strengthening the old runways by overlays, together with some lengthening of the main runways and enlargement of aprons.

Congressional appropriations for the first phase of this work were made available in 1953, and award of the first contract was made in the fall of that year to the joint venture of Morrison-Knudsen Co. and J. A. Terteling & Sons Co. of Boise, Idaho. A relatively mild winter season was used for the extensive mobilization of equipment, selection and approval of an aggregate source and the rough grading of the runway extensions and new apron areas.

The quarry site selected for the aggregates was located eight miles from the base and the contractor built his own private road from there to the field. During the height of construction this road was the most heavily traveled in the entire state of Idaho, with fleets of trucks hauling hot asphaltic mix and dry portland-cement concrete materials.

Five separate plants were set up in the area, including a concrete batcher and hot asphalt plant. Materials were brought from stock piles to the plants by a series of overhead and underground conveyors. Underground systems were run through pipe 9 ft in diameter. The plant was one of the most diversified ever set up by Morrison-Knudsen, a company whose reputation is almost built around large-scale operations in construction.

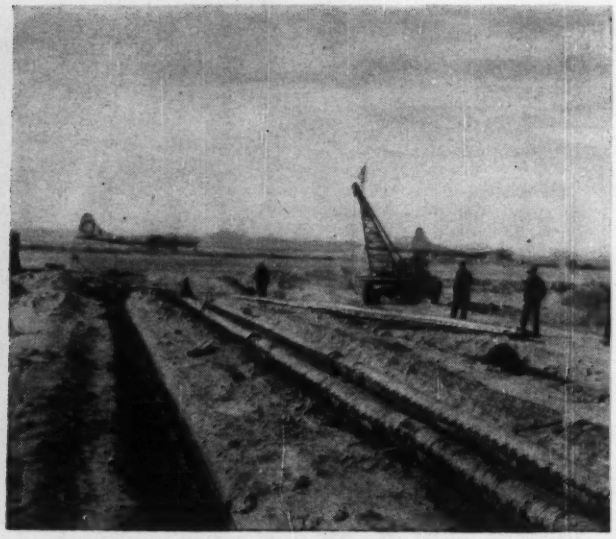
This plant had to feed two concrete mixers and two asphalt pavers which, at the peak of construction, were run continuously during a fourteen-hour working period. The concrete mixers were run in tandem in the 25-ft lane adjacent to that being paved. Mixing time was one minute before the concrete was dumped into prepared forms, struck off, vibrated, finished first by a transverse machine and then by a longitudinal machine, and finally jointed.

As much as 2,500 sq yd of 16-in. thick concrete pavement was placed in a 14-hour period, and as many as 2,000 tons of asphaltic concrete were laid in one 15-hour day.

Due to the arid climate, rainfall is

QUARRY SITE for both cement and bituminous concrete was eight miles from the air base. Contractor's road from quarry was most heavily traveled in state at peak of construction. Aggregate processing plant, concrete batcher, hot asphalt plant are all included.

THIS BREAK THROUGH on a runway by the supercompactor revealed, spectacularly, the location of an old drainage channel.



PLACEMENT of new electrical ducts and refueling lines prior to construction of new concrete apron was carried out by a truck rig.

light and wind and dust storms are violent. As a result, most of the concrete actually was placed at night.

• **100,000-lb loads**—When this field was first reactivated and turned over to the Military Air Transport Command, its runways needed only joint sealing, leveling and some resurfacing to meet the operational requirements of that agency. Subsequently, however, when the base was turned over to the Strategic Air Command, the program of new work was expanded to include: (1) strengthening overlays to support 100,000-lb gear loads, (2) lengthening the main runway by 2,000 ft (3) increasing width and length of the parking apron.

The original runways and aprons are built on a silty subgrade with some sands in it and with a California Bearing Ratio between 15 and 30. Apron runway and taxiway intersections had been built of portland-cement concrete 8 in. thick on a 7-in. base of well-graded sand. The remainder of the runways and tangent runs of the taxiways had been built of hot mix asphaltic concrete over a 2-in. crushed rock leveling course on 13 to 15 in. of ballast. The two main runways had been constructed 500 ft wide by 10,000 ft long with the apron 600 ft by 4,900 ft long.

For the first phase of the present reconditioning project, now being completed, the first 100 ft of the new runway extension was designed for asphaltic concrete, while all the rest of the new pavement is portland-cement concrete. Although the subgrade materials are classified as frost susceptible, a low water table and lack of record of frost heave made this factor of little importance.

Total pavement thickness necessary, based on the CBR strength, was found to be 14 in. This thickness was to be constructed, on a subgrade compacted to a depth of 16 in., as follows: 4-in. sub-base, 6-in. base of CBR 80 plus, prime coat, 2½-in. binder course, tack coat and a 1½-in. surface course.

For the cement-concrete pavement, two alternate designs were made, based on studies of available aggregate sources. The first design called for aggregate of basaltic ledge rock which would have to be shipped some distance to the site. Concrete using this aggregate was designed for a 750 psi flexural strength in 90 days. Pavement thickness for this design would be 14 in. The alternate design called for use of local gravel sources on the basis of a design of 650 psi flexural strength at 90 days and indicated a pavement thickness of 16 in. The contractor bid on this latter design.

• **Strengthening overlays**—Strengthening of existing runways and aprons was made with a bituminous-concrete overlay. Based on a minimum subgrade CBR of 15, overlay on existing asphaltic pavement was 4 in. thick, consisting of a tack coat and two lifts of resurfacing. For existing concrete pavement, a CBR of 20 was determined for the old sand sub-base and the rigid pavement was considered more than equivalent to the CBR 80 plus base requirement for new construction. The same thickness of asphaltic concrete, 4 in., was used for the overlay.

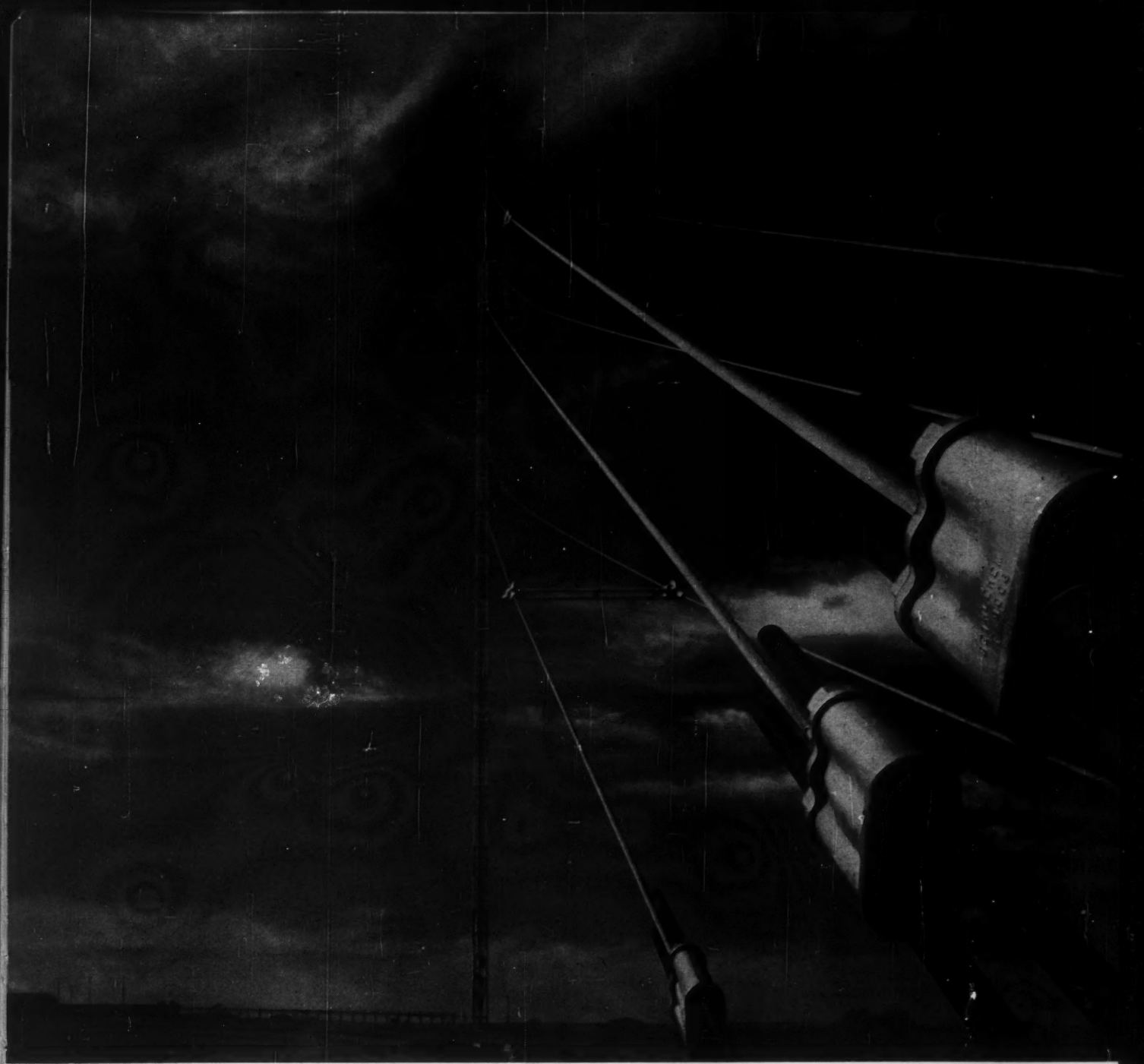
• **Heavy rolling**—During the design stage of the project, it was indicated that heavy rolling could materially increase subgrade and base course densities. A specification was added to the construction contract to require that test rolling be accomplished, but that rolling all or part of the pavement to be overlaid was to be done at the discretion of the contracting officer.

Density of the flexible pavement base course was valuably increased with the use of 200-ton super compacter with 100,000 lb wheel loads. Average settlement of the flexible pavement due to rolling was approximately ½ in. Four complete passes with the roller were used on flexible pavement before overlaying.

The rigid pavement subgrade was found improved by the rolling procedure and the deflection of the pavement was approximately ¼ in. But it was soon concluded that the loss of strength in the rigid pavement due to cracking during rolling more than offset the increased bearing of the subgrade, and accordingly rolling of the rest of the rigid pavement was not undertaken.

Work on the air field is still in progress this year, as the next stages of the rehabilitation get close to scheduling. This year a 25-ft wide duty shoulder around the periphery of the apron and along either side of the taxiways will be constructed to support the stabilizing gear on the big B-47's. These gears are located well out on the wings of this jet bomber, and the wings of the plane are so flexible that they sag some 15 deg from the horizontal, if unsupported when the plane is at rest.

Additional work will be required at the airfield in light of recent experience, and the Strategic Air Command will submit a further pavement project to Congress this year. The project is under the design and supervision of the Walla Walla District of the Corps of Engineers.



Dresser-Ideco Co. designed and fabricated the steelwork for this greatest of the TV giants; Mizell Construction Co., Ganado, Tex., handled the erection.

Wire Rope at Work—The tallest structure ever built by man now pokes its spire through the Oklahoma clouds, rising like a giant steel needle from the surrounding plains. This is the television tower of Station KWTV, Oklahoma City—a landmark that measures 1572 ft from ground level to top.

So slim and graceful is the tower that, from a distance, it appears to be a delicate line penciled against the sky. Yet it weighs 1,323,392 lb—a vertical load that requires the sturdiest type of bracing. To guy the structure, the engineers employed 24 steel cables composed of Bethlehem strand, a member of the Bethlehem wire rope family. These tremendously strong guy lines, which range in diameter from 1½ to 2 in., have an aggregate weight of more than a hundred tons and a combined length of over five miles.

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:

CONSTRUCTION • MINING • PETROLEUM • EXCAVATING • QUARRYING • LOGGING • MANUFACTURING

BETHLEHEM WIRE ROPE

BETHLEHEM STEEL

Truscon 96-foot Clerespan Steel Joists erected in Oblates of St. Francis De Sales High School, Inc., Toledo, Ohio. Bentz and Bankemper, architects; Henry J. Spieker Company, contractor.

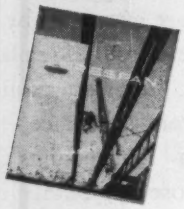
New Truscon Steel Joist

CLERESPAN® JOIST WITH WARREN-TYPE TRUSS DESIGNED TO MEET ALL LOADING CONDITIONS

REPUBLIC STEEL CORPORATION
3114 East 45th Street
Cleveland 27, Ohio

I'm interested in ideas for building. Please send information checked:

- ☐ New Truscon Clerespan Steel Joist catalog.
- ☐ Truscon Metal Lath catalog.
- ☐ ELECTRUNITE E.M.T. catalog.
- ☐ Truscon Ferrobord Steeldeck catalog.



Name_____ Title_____

Firm_____

Address_____

City_____ Zone____ State_____

K-8631

MORE REPUBLIC BUILDING

YOU ATTACH TRUSCON METAL LATH directly to underside of joists as a plaster base. Metal lath and plaster ceilings resist cracking, provide exceptional fire resistance, can be shaped and curved in pleasing design. Truscon makes more than 40 different metal lath items and accessories. All are quickly available through Truscon warehouses.

design provides a 96-foot clear span

Merchandisers and manufacturers . . . storage depots and service establishments . . . showrooms and supermarkets . . . all are trending toward wide, unobstructed floor space. Now, Truscon brings you a Clerespan (Longspan) Steel Joist that provides a full 96-foot-wide span free from the need for intermediate supporting columns.

To meet all types of loading conditions, the new Truscon Joist design utilizes a Warren-type truss. Joist depth is standardized at 18 inches to 48 inches. This relatively shallow depth allows pleasing exterior design and saves in masonry work by reducing the required height of building walls. The light weight of Clerespan Joists allows more savings in lighter framing and footings.

Standard pitched top chords provide for roof drainage with level ceilings. A Truscon Metal Lath and plaster ceiling, suspended directly from the underside of the joists, provides low-cost fire resistance. Open web of joists provides ready passage and concealment of ducts, pipes, and electrical conduit.

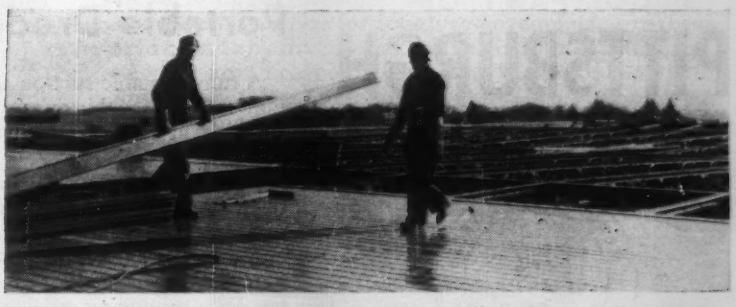
A new Truscon catalog gives you facts, dimensions, and loading tables for Clerespan Steel Joists up to 96 feet in length. Send coupon below for your copy.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

PRODUCTS SPECIALLY SUITED TO STEEL JOIST CONSTRUCTION

REPUBLIC ELECTRUNITE® ELECTRICAL METALLIC TUBING passes easily through the open web of steel joists. Every coupling is a union—no lines to turn. ELECTRUNITE E.M.T. is Republic's lightweight rigid steel raceway that protects wiring circuits against fire, moisture and mechanical injury. It's inspected by Underwriters' Laboratories, and approved by the National Electrical Code for exposed, concealed and concrete slab construction.



ROOF THE JOB WITH TRUSCON FERROBORD® STEELDECK. Clip or weld Ferrobord directly to Truscon Steel Joists. It comes in lengths long enough to span three or more purlins, roofs large areas quickly . . . flat, pitched, or curved. Exclusive Truscon design allows full-length interlocking, gives greater strength. Installs from the top; no scaffolding required. Write for specifications.

Research-
pays off in buildings, too!

Announcing

Design 12

World's finest standard prefabricated building!

This new concept in design guarantees a better, longer-lasting building for any operation at less cost.

INDUSTRY
COMMERCE
WAREHOUSING
AGRICULTURE

An Exclusive Product of

McCLOSKEY COMPANY OF PITTSBURGH

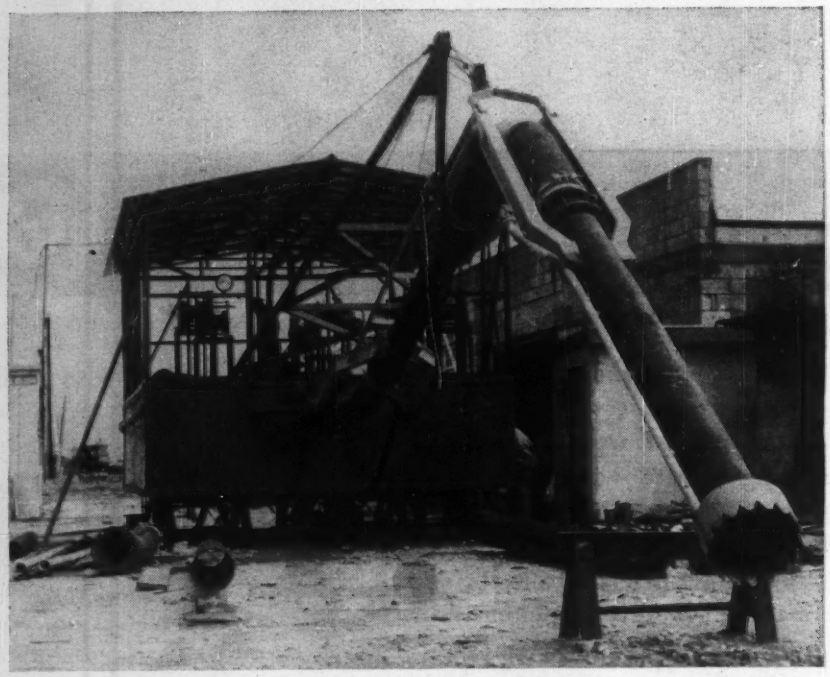
engineers and builders

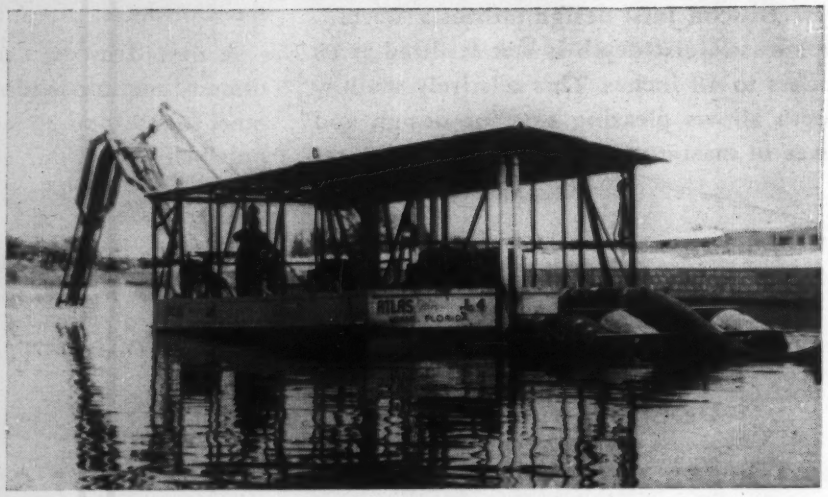
PITTSBURGH 1, PA.

MANUFACTURED FROM USS STEEL UNITED STATES STEEL

Shipment from plants at AMBRIDGE • ELMIRA
TRENTON • GARY • MEMPHIS • MINNEAPOLIS
PITTSBURGH • BIRMINGHAM • ROANOKE

NEW PRODUCTS





Portable Dredge Priced at $18,000

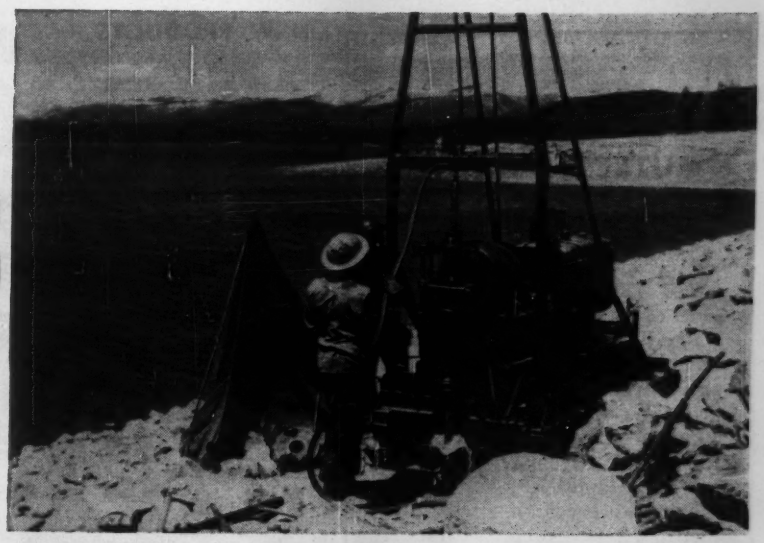
A fully portable suction dredge that can be operated by one man is now available at a bargain-basement price of $18,000.

Available in 6, 8, 10 and 14-in. sizes, the bantam units are already turning in some fairly good work records. For example, a diesel-powered 8-in. dredge with a 40-ft digging depth has been producing an average of 150 cu yd per hour. Operating cost has been estimated at 5¢ per cu yd of material stockpiled.

A larger 10-in. unit is currently producing 300 cu yd per hour at an average cost of 3½¢ per yd. This 20-ton dredge is powered by a 190-hp GM diesel driving a 10-in. Maddox pump through a 2½:1 reduction gear. The suction line winch, jet pump and service water pump are also driven from the diesel. The pumps are arranged so that they can be used to pump out bilges and transfer ballast. Night operation lights are included with power derived from a generator which is also hooked up to the main engine. The jet pump supplies 250 gpm at 125 psi through two ⅝-in. nozzles located on either side of the suction line.

The hull on this 10-in. model is 24 ft long, 14 ft wide and 5 ft deep and

JOY CORE DRILLS *for* FOUNDATION TESTING *or* GROUT HOLE DRILLING



FIRST ON YOUR BRIDGE OR DAM JOB

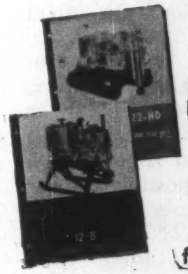
You get a 3-way advantage by using Joy diamond core drills for foundation testing and grout hole drilling on your bridge, dam, or other heavy construction job . . .

1. Extreme mobility—Steel skid mountings make moving a simple, fast operation, and cut lost time between holes to a minimum. Truck-mounted models are also available for the utmost in mobility, where terrain conditions permit the use of such mounting.

2. High drilling speed—Efficient operation, designed into Joy core drills over many years of manufacture, insures faster drilling of holes no matter what type of drilling is being one.

3. Highly accurate results—Precise control of all operations of Joy core drills makes possible the taking of accurate cores, and helps the operator to "feel" cracks and fissures when drilling grout holes.

Three models of Joy Core Drills are available—the No. 7, a lightweight, highly portable unit; the 12-B, for drilling to medium depths; and the 22-HD, a heavy-duty machine for tough requirements. Try these drills, made by the pioneer of core drill manufacturers, on your next bridge or dam job. Write for details to ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*



22-HD Drill
Bulletin D-28

12-B Drill
Bulletin D-21

Write for your free copy today

Consult a Joy Engineer

W&D C5697

JOY

WORLD'S LARGEST BUILDER OF CORE DRILLS, ROTARY BLAST HOLE DRILLS AND MOTORIZED DRILL RIGS

COMMENT
from the
BUTLER ENGINEER

—of cement shortage protection . . . and 22,000 bolt holes

One of our good customers—a Ready Mix Operator, decided to poke Ol' Man Cement-Shortage in the snoot. Good. So he ordered two silo-type bins from us, *each* providing 5000 barrels for reserve. Great Day! Storage for 10,000 barrels! As a glittering masterpiece of understatement, I'd say such capacity is unusual. Those bins were 30 feet in diameter. How high I don't remember (I'm writing this at home so no drawings). But we wondered if they shouldn't be painted in a yellow and black checkerboard design to mark them as aircraft obstruction.

In those two cement storage bins there were 22,000 bolt holes. The erecting crew found half a dozen holes that didn't quite register . . . *We heap sackcloth and ashes on our heads . . . We bow deeply in contrition, Boss.* We promise to do better next time.

Took my wife and complete complement of children on an auto trip East. Pennsylvania and New Jersey Turnpikes. Ever have a flock of lively youngsters frustrated by the walls of a car? Had to provide diversion so we made a game of counting Butler Plants vs. others along the way. Happy to say the game worked and also very happy that Butler Plants far outnumbered the others.

The big developments in the Road-Building and Ready Mixed industries are the automatic *one-man operated* Roadbuilders Plants and the punched-card electronic batchers for Ready Mixed Plants. Both developed by Butler . . . These are history-making inventions. We think they are present-making advances, as well. Want details? Please write.

Sincerely,

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

is constructed of ¼-in. steel plate on the bottom and ⅜-in. plate elsewhere. The all-welded hull is divided into four watertight compartments for ballasting. Two fuel tanks are located on either side and have a capacity of 1,600 gal.

Lifting eyes are located above the roof at four corners and the entire dredge can be swung onto a low-boy for transportation from job to job.

As with most units of this type modifications can be made to suit individual requirements. ATLAS CONSOLIDATED ENGINEERING CO., 769 N. W. 143RD ST., MIAMI, FLA.

Horsepower Boosted on New Olivers

Oliver has come out with a couple of new industrial wheel tractors—the Models Super 77 and Super 88, and both are available with either gasoline or diesel engine.

Gasoline engines are Oliver 6-cyl types with compression ratios of 7.0 to 1. Diesel engines start and run on diesel fuel alone and under normal conditions require no auxiliary starting mechanisms or double fuel supply.

Power in the new tractors has been boosted over that of previous models with the Super 77 developing 40 dbhp and the Super 88 having 49.81 dbhp. The result is a substantial increase in working ability on drawbar and belt.

Frames are reinforced and have special mounting pads incorporated in their design to form an attachment point for a variety of tractor-mounted equipment. Front axles have been beefed up to stand greater strains. Transmissions in the new Olivers have six forward speeds and two reverse.

Features desigend to give improved performance, greater driving ease and longer tractor life are: double-disc differential brakes, bypass cooling, removable wet cylinder sleeves, engine hour meter, auto-type recirculating ball steering and a torsional rubber suspension seat that adjusts by a hand screw to suit weight of operator.

Optional equipment includes independently controlled rear power take-off, belt pulley and flexible coupling for front-mounted hydraulic pump.

Both Super 77 and 88 tractors are designed to work with hydraulic front-end loader, hydraulic straight-line loader, side-mounted hydraulic mower, snow plow, backfill blade and crane attachment for front-end loader, and with a rear-mounted hydraulic backhoe. In addition, the Super 88 operates a hydro-trencher with ½ cu yd bucket. Dept. ST, The Oliver Corp., 400 W. Madison St., Chicago 6, Ill.

Tubeless Switch for Street Lights Lasts Longer

A new photo cell switch, which eliminates the use of tubes, is now being installed in 8,400 street lights in two New York City boros. These switches are set to turn the street lights on and off automatically, according to the degree of daylight or darkness at each street light location.

The switches, which embody a new type of electric circuit and a sensitive photo cell no larger than a kernel of corn, make possible the use of a switch that is from one-half to one-quarter the size of those used heretofore. Further, these new

Biggest Scrapers Ever!

Introducing the new **WIDE-BASE TIRES**

41 YARDS model OS-300

35 YARDS model OS-260

28 YARDS model OS-200

CAPACITY AND RUGGEDNESS TO MAKE FULL USE OF HORSEPOWER DELIVERED BY BIGGEST TRACTORS

Now available with the new wide base tires, this latest series of Wooldridge *Terra Clipper* super scrapers offers tremendous load carrying capacity and flotation never before obtainable. From hitch to push block, they incorporate balanced ruggedness to make full productive use of the maximum horsepower offered not only by the biggest tractors available today—but also the larger prime movers announced for the future. Along with big capacity, they provide the proved Wooldridge characteristics of fast loading and dumping, proper weight distribution, and easy maneuverability for use with crawler or rubber tired tractors. Extreme simplicity pays off in minimum service time. For highest production at lowest cost ever offered in tractor-drawn scrapers, ask your Wooldridge dealer about Models OS-300, OS-260 and OS-200, or write for Bulletin No. OS-251.

Wooldridge now offers the most complete range of scraper capacities

MODEL OS-300 . .	41.0 cu. yds.
MODEL OS-260 . .	35.0 cu. yds.
MODEL OS-200 . .	28.0 cu. yds.
MODEL OS-152 . .	18.0 cu. yds.
MODEL OS-90 . .	15.0 cu. yds.
MODEL OS-80 . .	10.5 cu. yds.

CCS **WOOLDRIDGE**

MANUFACTURING DIVISION
CONTINENTAL COPPER & STEEL INDUSTRIES, INC.
SUNNYVALE, CALIFORNIA, U.S.A.

TERRA COBRAS

TERRA COBRA WAGONS

SCRAPERS

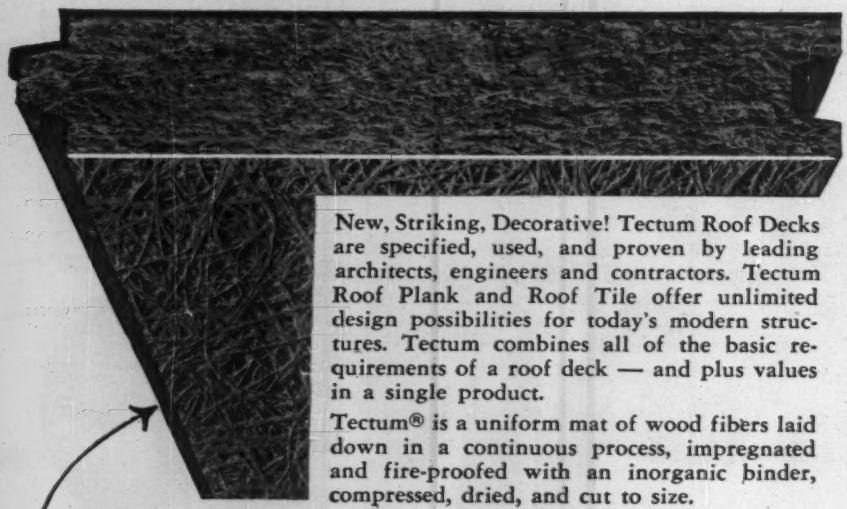
CABLE CONTROL UNITS

RIPPERS

BULLDOZERS

UNLIMITED DESIGN POSSIBILITIES WITH Tectum® ROOF PLANK AND ROOF TILE

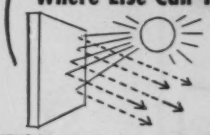
(Even With Restricted Budgets)



New, Striking, Decorative! Tectum Roof Decks are specified, used, and proven by leading architects, engineers and contractors. Tectum Roof Plank and Roof Tile offer unlimited design possibilities for today's modern structures. Tectum combines all of the basic requirements of a roof deck — and plus values in a single product.

Tectum® is a uniform mat of wood fibers laid down in a continuous process, impregnated and fire-proofed with an inorganic binder, compressed, dried, and cut to size.

Where Else Can You Find These Attributes Combined In One Product



TEXTURAL — New — arresting, pleasing. Allows new concepts for decorative design. 65% reflectivity. Paintable if desired.

ACOUSTICAL — As good as the best, better than most. Average noise reduction coefficients up to 85%.

INSULATIVE — 3" thickness has the low "U" factor of .15. Thickness of 2" has the low "U" factor of .20.

NON-COMBUSTIBLE — Rated non-combustible under Federal Specification SS-A-118a, and by the National Bureau of Fire Underwriters, based on fire hazard tests at Underwriters' Laboratories, Inc.

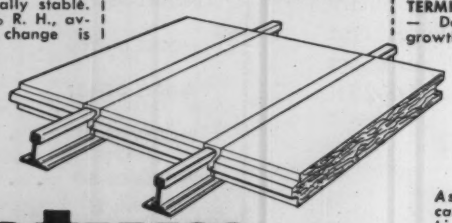
LIGHT WEIGHT — Lighter than most woods. 20# to 24# per cubic foot.

STRUCTURAL — Engineered to carry roof loads up to 200# per square foot on economical spans.

STABLE — Dimensionally stable. At humidities of 98% R. H., average dimensional change is only 15/100 of 1%.

LOW COST — Planks 30" wide and standard tiles 32"x48" lay faster. Cost less installed.

TERMITE AND FUNGUS PROOF — Does not support fungus growth or termite life.



SEE IT NOW!

Ask for sample and catalog or refer to Section Te/2e, Sweet's Architectural File.

Tectum div. ----------

THE ALLIANCE MANUFACTURING COMPANY
105 SOUTH SIXTH STREET
NEWARK, OHIO

TECTUM DIV.
Dept. #130, 105 S. Sixth St., Newark, Ohio
.....Send technical data.
Name _____ Title _____
Company _____
Address _____ City _____ State _____

NEW PRODUCTS

switches are said to last indefinitely whereas the old-type switches, which depended upon tubes, frequently failed due to the burning out of tubes.

The new switch will also replace many of a still older type of street light control, the astronomical or electric clock switch. Many of these clock-type switches now control groups of five street lights. In the event of electric "feeder" line failure, astronomical switches involved in the area of electrical failure have to be reset, one by one, after the electricity is restored. By using the new photo cell switches, the street lights in any area affected by electrical failure will automatically resume illumination when the current is restored. BROADWAY MAINTENANCE CORP., 22-09 BRIDGE PLAZA N., LONG ISLAND CITY, N. Y.

Plastic Paint Stops Concrete From Sticking

A coating for concrete handling equipment to which concrete will not adhere can reduce the amount of time devoted to clean-up work.

The new coating, called Epoxyn Crete-Free, is said to have excellent adhesion and be extremely resistant to weathering, corrosion, solvents and chemicals. It comes in clear form for application over present paint or in any desired color for application on new or refinished equipment. It can also be applied to new wood or metal forms to eliminate oiling.

Superior properties are claimed for the finish since curing is achieved by chemical reaction rather than through the evaporation of solvents or oxidation of oils. CO-POLYMER CHEMICALS, INC., 12350 MERRIMAN RD., LIVONIA, MICH.

Streamlining Makes Soil Hydrometer More Accurate

An improved hydrometer for determining soil particle size is equipped with Bouyoucos grams-per-liter scale to ASTM and AASHO specifications. One of its refinements is a molded body of streamlined design that is said to reduce the amount of material that can settle on the shoulders of the instrument, promotes accuracy of readings and diminishes agitation of the oil suspension.

In addition, improved uniformity of size and shape reportedly achieves uniformity in volumetric displacement. A two-sided scale increases reading convenience. TAYLOR INSTRUMENT COMPANIES, 95 AMES ST., ROCHESTER 1, N. Y.

OBITUARIES

George S. Lamphere, 72, retired civil engineer with the Corps of Engineers, died in Baltimore May 25. Early in his career he was with Great Northern Railway on location, construction and valuation. During World War I he was with the construction division of the Army, and for the next 10 years worked for U.G.I. Contracting Co. of Philadelphia. Later he served as assistant state inspector for PWA on Maryland projects. Since World War II he had been resident engineer for the Corps of Engineers on various war projects.

James M. MacMartin, 90, civil engineer and chief engineer of the Delaware & Hudson Railroad for 40 years, died June 3 in Albany, N. Y. A graduate of Rensselaer Polytechnic Institute, he joined the railroad in 1890. He became chief engineer nine years later and held that post until retirement in 1939.

William N. Patten, former vice-president of Stone & Webster Engineering Corp., Boston, Mass., died in Salem, Mass., June 8. An 1891 graduate of the University of Maine, he was associated with the engineering corporation for 50 years until retirement in 1949. From 1928 to 1934 he served as a consultant to the Japanese government on hydro-electric development.

J. Raymond Hoffert, sanitary engineer and veteran of 35 years service with the Pennsylvania State Health Department, died June 4 in Harrisburg, Pa. After graduation from Cornell University he joined the bridge and construction drafting department of Pennsylvania Steel Co. Later he served as engineer and assistant superintendent of the Harrisburg Park System, and as progress engineer during construction of Edgewood Arsenal. From 1927 to 1946 he was an officer of the State Sanitary Water Board.

Carlisle M. Manheim, retired civil engineer, died in Columbia, S. C. early in June. He had been associated with Johnson & Roberts Engineering Co. of Marion, S. C., the South Carolina State Highway Department and State Forestry Commission, and the Federal Works Administration.

Elton C. Sease, 53, senior testing engineer for the South Carolina State Highway Department, died in Columbia, S. C., early in June. He was a graduate of Clemson College.

A KERRIGAN
Grating for Every Need
A CATALOG
for every Grating
Write for your
Copy NOW!

STEEL
for the 1001 applications where safety and strength come first. Kerrigan Steel Grating is BONDERIZED for corrosion resistance and extra years of life.

STAINLESS and MONEL
non-magnetic steel for the chemical, oil and packing industries . . . for ANY installation where high resistance to heat, acids, chemicals, and corrosion is needed.

TRULY . . .
In both size and type, there is a Kerrigan Weldforged grating for every need. Let our new catalogs prove it to you. Send for the one you think best answers your need (or ask for ALL FOUR if you wish). We will also be glad to send you a desk-size grating sample. Write Kerrigan Iron Works, Inc., General Sales Office, 274 Madison Ave., New York City.

RIVETED STEEL
where it is desired to match existing grating.

ALUMINUM
spark-proof for those whose need is strength AND lightness. Extra safe and strong. Allowable fiber stress 15,000 psi. Modulus of elasticity 10,000,000 psi.

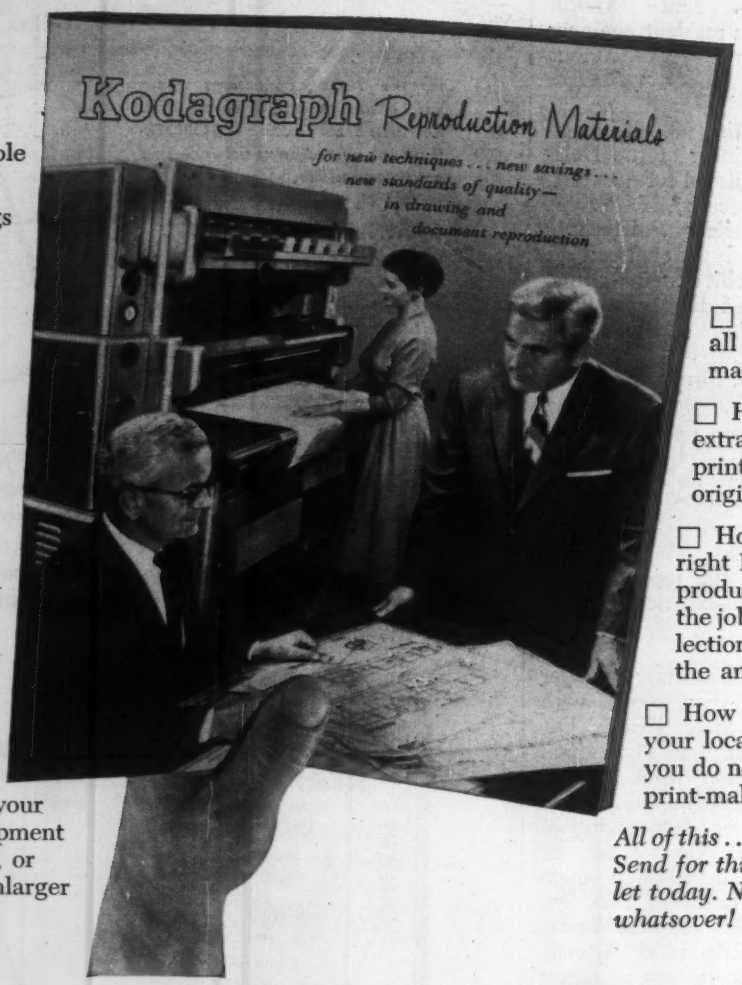
KERRIGAN GRATING

Just off the press... this 20-page illustrated booklet is jam packed with valuable information to help you save drafting time... protect drawings... get better prints

Mailed to you... *FREE!*

You'll find all the answers here—

- ☐ How to get low-cost protection for your valuable drawings
- ☐ How to revise drawings without redrafting
- ☐ How to get sparkling prints from "unprintable" originals
- ☐ How to combine separate designs in one print
- ☐ How to eliminate the negative step in producing photographic intermediates
- ☐ How to simplify print production and distribution
- ☐ How to correct photographic intermediates with a pencil eraser
- ☐ How to reduce reading errors in the shop
- ☐ How to do more with your present reproduction equipment—direct-process, blueprint, or photocopy machine . . . enlarger . . . process camera


Kodagraph Reproduction Materials
for new techniques . . . new savings . . .
new standards of quality—
in drawing and
document reproduction

- ☐ How to reproduce all the fine detail on maps, diagrams, etc.
- ☐ How to produce extra copies of blueprints, two-sided originals
- ☐ How to select the right Kodagraph Reproduction Material for the job at hand. New selection chart gives you the answer at a glance
- ☐ How to order from your local blueprinter if you do not have your own print-making equipment

All of this . . . and much more. Send for this valuable booklet today. No obligation whatsoever!

Kodagraph Reproduction Materials

"THE BIG NEW PLUS" in engineering drawing reproduction

MAIL COUPON FOR FREE BOOKLET

67

EASTMAN KODAK COMPANY
Graphic Reproduction Division, Rochester 4, N.Y.
Gentlemen: Please send me a free copy of your new booklet on Kodagraph Reproduction Materials.

Name _____ Position _____

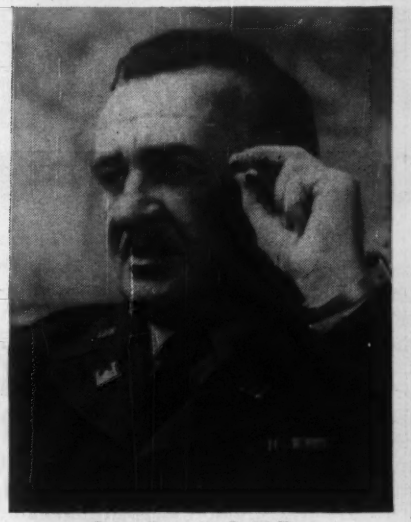
Company _____

Street _____

City _____ Zone _____ State _____

Kodak

Maj. Gen. B. L. Robinson



Brig. Gen. B. J. Talley

Top Army Engineers in New Assignments

In a series of reassignments to major posts at home and abroad, two top-ranking officers in the Corps of Engineers will assume new commands in Europe and another will move up to the Washington headquarters of the Corps of Engineers, effective next month.

Maj. Gen. Bernard L. Robinson, deputy chief of engineers for construction, will report to the Joint Construction Agency, United States European Command, Paris, France, as director. Brig. Gen. Benjamin B. Talley, North Atlantic Division Engineer, will join the headquarters of the Mediterranean Division in Nouasseur, French Morroco. And Brig. Gen. Charles G. Holle, South Atlantic Division Engineer, will succeed Gen. Robinson in Washington, D. C.

Gen. Robinson has been in Washington for the last four years, serving as engineer-commissioner of the District of Columbia and later as assistant chief of engineers before becoming deputy chief for construction in July 1953.

He held various engineering and construction assignments in the Pacific during World War II and in 1945 became chief engineer, U. S. Army Forces, with headquarters in Honolulu. After the war, Gen. Robinson was assigned to the Galveston district as chief engineer and in 1949 became division engineer for the South Atlantic Division in Atlanta, Ga.

In Paris he will succeed Maj. Gen. George J. Nold, who plans to retire after 37 years of active service.

Gen. Holle, who will succeed Gen. Robinson as deputy chief of engineers for construction, has been South Atlantic Division Engineer since 1953. He is also serving as a member of the Mississippi River Commission and of the Board of Engineers for Rivers and Harbors.

A former district engineer in New Orleans, Gen. Holle has had a number of assignments in the Canal Zone, including duty as engineer for maintenance of the Panama Canal, and in the Lower Mississippi Valley Division, where he became assistant division engineer and assistant to the president of the Mississippi River Commission. His tours of duty in the Office of the Chief of Engineers have included service as control division chief and as executive officer.

Gen. Talley, who will report to the Mediterranean Division, has headed up the North Atlantic Division with headquarters in New York City since March 1952. He was formerly assigned to the staff of the Office of the Assistant Chief of Staff, G-2, in Washington.

During his career, which has included both the military and civil functions of the Corps of Engineers, Gen. Talley has served as district engineer at Huntington, W. Va., and Louisville, Ky. In the early phases of World War II, he supervised construction of army installations in Alaska and took part in the Battle of Attu. Later he participated in the Normandy and Okinawa landings, and was sent to Korea after V-J Day as deputy

HOW TO HANDLE
WET JOBS

#31 of a Series

96 IN. DIAMETER MAIN
FOR BETHLEHEM STEEL

Sparrows Point, Md.

Contractor: C. J. Langenfelder & Son

WELLPOINTS SPEED PROGRESS
TO 160 FT PER DAY

WITH ERRATIC SOIL conditions throughout the project, many problems beset the contractor installing this big steel waterline.

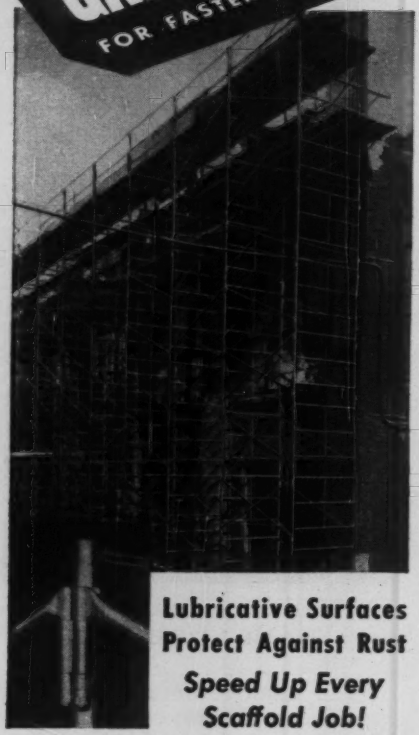
• Some of the tough ones fell to Griffin Wellpoint supervisors. Continual changes of soil formation demanded new solutions all the time, and made dewatering a constant obstacle race. Quick, accurate on-the-spot decisions gave the contractor dry trench—*fast*—thus enabling him to push the pipeline through 4½ miles of stubborn ground at the remarkable progress rate he achieved.

• Next time ground water gets in *your* way, it will pay you, too, to get in touch with Griffin.

GRIFFIN
WELLPOINT CORP.
881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

NOW.. AT NO EXTRA COST
UNIVERSAL SCAFFOLDING
GALVANIZED
FOR FASTER ERECTION



Lubricative Surfaces Protect Against Rust
Speed Up Every Scaffold Job!

Universal's perfected galvanizing provides a smooth, rust-preventive and lubricative surface—makes your scaffold work faster, look better on the job, and last longer—eliminates rusted, rough surfaces that slow down scaffold operations. Get all the benefits of zinc-galvanized scaffolding—and, *at no extra cost!*

GALVANIZED PROTECTION CUTS OPERATING AND MAINTENANCE COSTS!

Universal's clean, smooth surface assures more profitable scaffolding operations — substantially reduces costly recurring maintenance expenses.

You can count on Universal for more efficient scaffolding — *and greater profits.*

Write for complete information

UNIVERSAL MFG. CORP.
ZELIENOPLE 13, PA.

commander of Army Service Forces.

Brig. Gen. Walter K. Wilson, Jr., now Mediterranean Division Engineer, is scheduled to return to the United States in August. He has been assigned to Headquarters, 18th Engineer Brigade, Fort Leonard Wood, Mo.

AEC Names David F. Shaw To Manufacturing Post

The Atomic Energy Commission has appointed David F. Shaw as assistant general manager for manufacturing.

Since joining the AEC in 1947, Shaw has been associated with its expansion and construction programs at the Hanford Works in Richland, Wash., and in other areas of the northwest. He spent several years in engineering and construction work with the TVA and the Birmingham, Ala., Slag Co. after graduating from the Georgia School of Technology, and served overseas during the war with the Corps of Engineers.

The new acting manager of the Hanford Operations Office, succeeding Shaw, is James E. Travis, civil engineering graduate of Marquette University and former assistant manager at Hanford.

Secondary Road Authority Is Named Highway Engineer

Walter G. Johnson has been named chief engineer for the Kansas State Highway Commission, succeeding Ross Keeling, who resigned last year to join Howard, Needles, Tammen & Bergendoff, consulting engineers.

Well known for his work on secondary road programs, Johnson has been active in the American Road Builders Association and the American Association of State Highway Officials. He is a recipient of AASHO's 25-Year Meritorious Service Award and is presently serving as chairman of its subcommittee on the Design, Construction and Maintenance of Secondary Roads.

Johnson has been associated with the Kansas State Highway Commission since 1928. For the last 10 years, he has been engineer in charge of its secondary road department, which he helped to organize in 1945.

W. G. Johnson

Travel Award Established To Promote Highway Study

To stimulate the interest of young engineers in highway engineering as a career, an Illinois highway contractor has established the C. C. Wiley Traveling Award in Highway Engineering at the University of Illinois.

The $1,200 award, named in honor of C. C. Wiley, emeritus professor of highway engineering at the university, will be presented annually to a senior highway engineering student in the College of Engineering. It is to be used by the winner for travel in the United States during the summer months following graduation to study highway problems, including planning, design, construction and operation.

This year, two students—Dan C. Dees of Oblong, Ill., and Joseph W. Guyton of Canton, Ill.—tied for the award, which the donor has increased to enable both to participate in the program. The winners received their civil engineering degrees this month and will return to the university next fall for graduate study in highway and traffic engineering.

During the next few months, Dees and Guyton will travel from Illinois to California and from Montana to Texas, visiting contractors, highway officials, universities, equipment manufacturers and distributors, and highway projects completed and under construction.

Men and Jobs Briefs . . .

• **Associations**—The New England Chapter of the American Public Works Association elects **Charles W. Cooke**, Hartford, Conn., public works director, as president . . . **Walter B. McKendrick**, chief engineer of the Delaware State Highway Department, heads up the Delaware Society of Professional Engineers . . . **J. Olan Cooper**, Auburn, Ala., becomes south-

(*Continued on page 60*)

Special Report to Batch Plant Operators

HELTZEL'S AMAZINGLY ACCURATE CEMENT VALVE PROVED BEST FOR AUTOMATIC BATCHING

The heart of any cement batching plant is the valve that controls the flow of cement into the batchers. Those who know batching consider the Heltzel Tubular Cement Valve (Fig. 1) the finest ever developed, for two standout reasons:

First, the Heltzel Tubular Valve conforms to the condition of the material. If the cement is fluid and running fast, the opening can be restricted to control the flow. If the cement is compact and running slow, the valve can be opened to compensate.

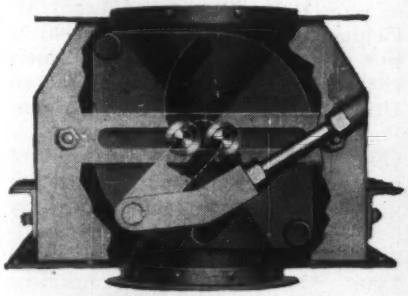


Fig. 1 Heltzel's Popular Tubular Cement Valve.

Second, the working parts of the valve are entirely enclosed, away from the cement. Ordinary plug valves are open to the cement and frequently clog and bind, necessitating work stoppage for repairs. This can never happen with the Heltzel Tubular Valve because the working parts are never exposed to the material.

These two highly desirable valve features make the Heltzel Tubular the perfect valve, where flow control and reliability are considered important. The Heltzel Tubular Valve is standard on all Heltzel Cement Plants—straight or combination. It can be operated manually or by means of an air or hydraulic cylinder, as the customer requires. It is used on Heltzel Recirculators and cement loading bins as a control valve or gate.

The Perfect Automatic Valve

For automatic cement batching, from either the straight cement or the combination plant, Heltzel engineers have developed the Heltzel Combination Rotary Feeder-Tubular Valve (Fig. 2). Note in the charge sequence, pictured at the bottom of this page, when the batch cycle is started (Fig. 3) both the Tubular Valve and the Rotary Feeder function simultaneously. When 90 to 95% of the batch has been weighed the scale automatically closes the Tubular Valve. The Rotary Feeder continues to operate (Fig. 4) until the final few pounds are weighed in. When the scale reaches the desired weight, compensated for mid-air material, a motor brake stops the Feeder instantly (Fig. 5).

Speed Plus Accuracy

This combination of Rotary Feeder and the Heltzel Tubular Valve means unparalleled speed with pinpoint accuracy—the ideal conditions for efficient automatic batching. And, the Heltzel Combination Rotary Feeder-Tubular Valve greatly reduces the possibility of work stoppage due to valve failure. If the standard rotary feeder or rotary plug valve mal-functions, or a power failure occur, the plant cannot be operated. With the Heltzel Combination Valve, the plant is still operative, because the cement can be gravity fed into the batcher manually through the Tubular Valve.

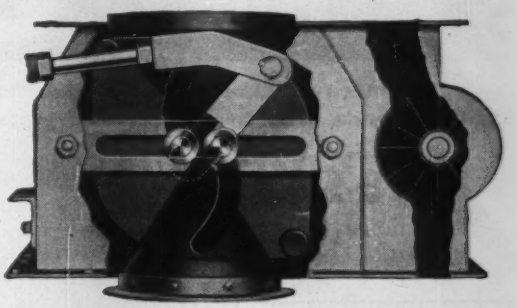


Fig. 2 The New Heltzel Combination Rotary Feeder-Tubular Valve.

If you use batching equipment, cement, aggregate or combination—portable or stationary—it will pay you to look over the Heltzel complete line of Batchmasters—the finest, fastest most accurate and dependable plants available today. Literature available. State your requirements and booklets covering your type operation will be sent to you by return mail.

HELTZEL STEEL FORM and IRON Company
39000 Thomas Road
WARREN, OHIO

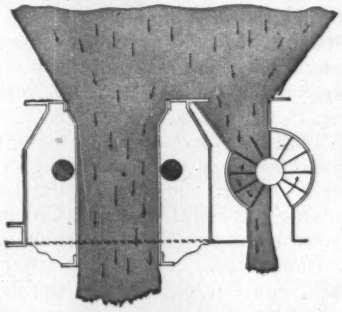


Fig. 3 Both Valves Open for Faster Batching.

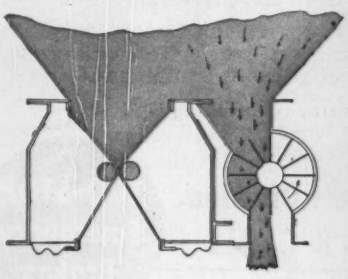


Fig. 4 Last Few Lbs. Rotary Fed for Greater Accuracy.

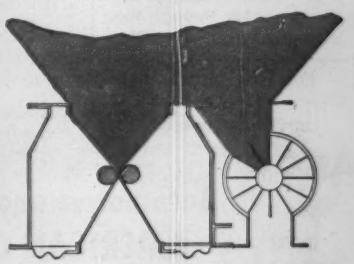
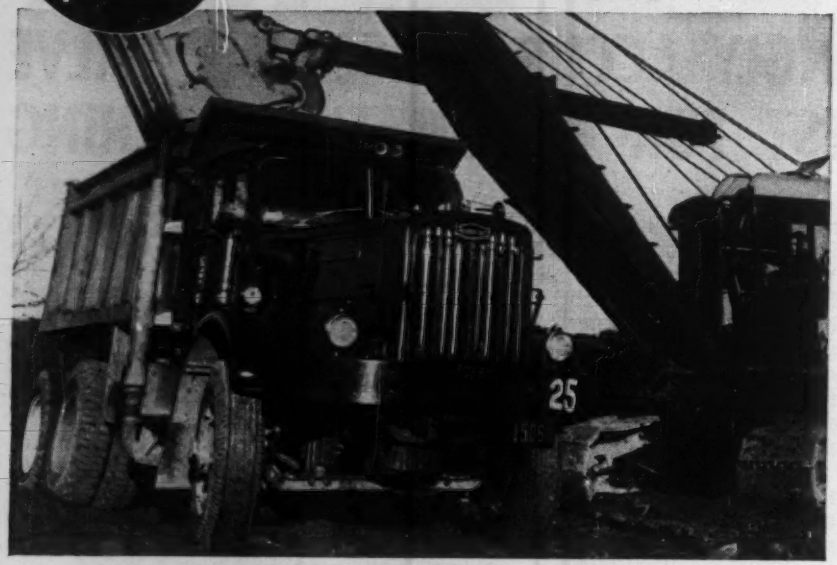


Fig. 5 Both Valves Close, Ready for Next Cycle.

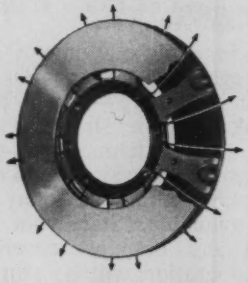
an ACCO product

Tru-Stop Brakes Used on Construction Equipment



- **Emergency Brakes for Trucks, Motorized Equipment**
- **Cable Drum Brakes for Cranes, Shovels**

Here's Why: TRU-STOP disc type brakes have long been recognized as the outstanding choice for emergency brakes on heavy duty trucks and tractors. Their outstanding advantages are now causing them to be used to brake cable drums on cranes, shovels and other construction equipment.



Longer Lining Life

• The terrific heat generated in braking cuts lining life. TRU-STOPS quickly dissipate this heat. Most of the disc is exposed to the air even during braking. And a cooling jet of air circulates through the disc, prolongs lining life.

For full details on TRU-STOP write for booklet

Real Emergency Brakes. On motorized equipment TRU-STOPS *are real emergency brakes—not just parking brakes.* They serve as auxiliary brakes on long down-grades and can bring the vehicle to a quick stop if service brakes suddenly fail. They prevent accidents by insuring quick positive stops in emergency situations.

Positive Parking Brakes. TRU-STOPS hold safely on steep grades—prevent "parking brake" accidents.

Lower Maintenance Requirements. TRU-STOP design simplifies adjustment or relining, decreases maintenance frequency. In truck or bus applications TRU-STOPS are normally mounted on the drive shaft. Relining or adjustment is a simple job for any mechanic with ordinary tools. It is not necessary to drop the drive shaft.

Specify TRU-STOPS for factory installation on your next truck, tractor, crane, shovel or other piece of equipment.

Write for literature describing application of TRU-STOPS to your particular equipment

ACCO

Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

TRU-STOP Emergency Brakes

MEN AND JOBS

eastern representative of the National Highway Users Conference.

• **Careers**—Gov. George Leader of Pennsylvania appoints Congressman **William J. Green, Jr.**, of Philadelphia, chairman of the Pennsylvania Turnpike Commission . . . **Elwood T. Nettleton**, engineer of contracts for the Connecticut State Highway Department, resigns to enter private practice as a construction consultant . . . **James B. Lambeth**, chief engineer for the City of Raleigh, N. C., leaves to join the engineering staff of the North Carolina Equipment Co. . . . **R. F. Snyder** resigns as Massillon, O., city sanitary engineer, to become manager of the Mahoning Valley plant of Ohio Water Service Co.

• **Business**—A. M. Kinney, Inc., Cincinnati, O., consulting engineers, expands its executive staff through the addition of **G. D. Luce** and **P. H. Ziel** as project managers and **Edward M. Gelman** as field supervisor of construction . . . **Bernard B. Gordon**, senior civil engineer with East Bay Municipal Utility District, Oakland, Calif., joins Porter, Urquhart, McCreary & O'Brien, San Francisco, as head of its West Coast foundation engineering division . . . **J. W. Hubler**, formerly head of the civil engineering department at Washington University, St. Louis, Mo., is appointed consulting engineer for Macomber, Inc.

• **Education**—A gift from **Walter S. Carpenter, Jr.**, chairman of the board of E. I. du Pont de Nemours and Company, will be used by Cornell University for the construction and operation of an engineering library and administrative center in the new engineering quadrangle now under construction . . . **Kenneth L. Holderman**, director of engineering extension at Pennsylvania State University is appointed assistant dean of the College of Engineering and Architecture.

• **Retirements**—After 41 years in the electric industry, civil engineer **Nathan B. Higgins** retires as president of the Safe Harbor Water Power Corp., Baltimore, Md. . . . **Aubrey Smith**, General Electric Co. application engineer for the cement industry, retires after 35 years of service with G-E but will continue his association with the cement industry as a consulting engineer . . . After being with the company for 40 years, **Charles E. Coleman** leaves the DeLaval Steam Turbine Co., Trenton, N. J., where he was primarily concerned with the problems of the municipal water works industry.

With a Homelite on the Job

Work speeds up . . . costs go down . . . always! Because a lightweight, carryable Homelite gives you instant, efficient power any place you need it . . . power for operating every type of electric tool or bright, flickerless floodlighting. Here, for example, a Homelite gasoline engine driven Dual Purpose generator, operates a standard universal power saw and a one man high cycle concrete vibrator *both at the same time*. Write for complete bulletin showing many ways to cut time and costs with Homelite Carryable Generators.

HOMELITE CORPORATION

1106 RIVERDALE AVENUE • PORT CHESTER, N. Y.

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

▲† **Maine**—SPECIAL AAA FACILITIES—BA 7/7—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., Special AAA Facilities, Limestone, Caswell, Connor and Caribou, ENG-19-016-55-161. $4,000,000. Plans deposit $50, refundable. Crandall Eng. Co., 261 Franklin St., Boston, Mass., engr. CD 5/27.

HEAVY CONSTRUCTION—SLC

▲ **Vermont**—Central Vermont Public Service Corp., 121 West St., Rutland, soon lets contract hydro-electric development, Lamoille River, East Georgia. $2,000,000. Charles T. Main, Inc., 80 Federal St., Boston, Mass., engr. CD 5/11.

HEAVY CONSTRUCTION—LB & CA

▲ **MASSACHUSETTS**—Massachusetts Turnpike Auth., 80 Boylston St., Boston,
S. J. Groves & Son Co., 19 Rector St., New York, N. Y. CA **$4,513,884**, est. $4,500,000. Contr. 51-031 hy. and bridge constr., Otis and Blanford. CD 5/31, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—LB & CA

▲† **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y. cancelled bids to have been opened Aug. 10, AAA facilities Niagara Area, FY 55 at Hamburg, $1,000,000-$3,000,000; at Cambria, $500,000-$1,000,000; at Mill Grove, $1,000,000-$5,000,000; at Millersport, $1,000,000-$3,000,000; at Lake Ontario, $500,000-$1,000,000, NEW YORK. CD 5/17.

▲ **Nicholas DiMena & Sons, Inc.**, 1515 Blondell Ave., New York 61, N. Y. CA **$2,520,722.** combined relief sewers in Williamsburg Pl. from Kent to Flushing Aves.; Flushing Ave. from Williamsburg Pl. to N. Elliott Pl.; Nassau St. from N. Elliott Pl. to Navy St.; Navy St. from Concord to Sands Sts.; Concord St. from Navy St. to point approx. 280 ft. west of Navy St.; Carlton Ave. from Flushing Ave. to and across Myrtle Ave.; Myrtle Ave. north side from Carlton Ave. to Washington Park and southerly across Myrtle Ave. at Washington Park, reconstr. combined sewers in Nassau and Sands Sts. each from Gold to Navy Sts; Navy St. from Sands St. to Hudson Ave.; York St. from Hudson Ave. to Green Lane, BROOKLYN, N. Y. President Brooklyn Boro, Boro Hall, Brooklyn 1, N. Y. CD 5/19, under LB.

▲† **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y. cancelled bids to have been opened Aug. 18, paving runway, shoulders, FY 56, Plattsburgh Air Force Base, $1,000,000-$3,000,000, PLATTSBURGH, N. Y. CD 3/22.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg,
PTC—**Central Pennsylvania Quarry Stripping & Constr. Co.**, Hazleton, Pa. LB **$3,799,072.** constr. 4.07 mi. Franklin Twp. and Parryville Borough, northeastern extension, Sect. 36-G; Carbon Co.;
PTC—**J. Robert Bazley, Inc.**, Pottsville, Pa. LB **$4,021,269.** constr. 5.83 mi. Franklin and Penn Forest Twps., northeastern Extension, Sect. 36-H, Carbon Co. Bids June 9. CD 5/17 and 5/20.

▲† **George Hyman Constr. Co.**, 1010 Vermont Ave. N. W., Wash., D. C. LB **$4,794,586.** (11 bidders) hospital, ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. Bids June 9. CD 6/3.

BUILDINGS—LB & CA

▲ **Vanity Fair Homes**, c/o Henry A. Klar Realty Co., 220-02 Horace Harding Blvd., Bayside Hills, N. Y. Owner Builds Est. **$3,600,000.** 300 HOUSES on tract at Deer Park Ave. and Southern State Parkway, BABYLON, N. Y.

▲ **Briar Point at Brentwood Homes**, c/o Stanley J. Shaftel, archt., 89-47 163 St., Jamaica, N. Y. Owner Builds. Est. **$8,600,000.** 862 HOUSES on 340 acre tract bounded by Rutledge and Hancock Sts. between Washington and Grant Aves., BRENTWOOD, N. Y.

▲ **Holiday Park Homes**, c/o Lane Realty, 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$3,000,000.** 204 HOMES tract on Pea Pond Rd., NORTH BELLMORE, N. Y.

▲ **Matthew H. McCloskey & Co.**, 1620 W. Thompson St., Phila., Pa. Owner Builds. Approx. **$20,000,000.** Penn Center TRANSPORTATION BLDG., PHILA., PA. CD 5/20/53.

▲ † **The William T. Lyons Co.**, 1700 Friendship St., Baltimore, Md. CA Total est. **$2,384,000.** Substructure GYMNASIUM field area and parking areas, U. S. Naval Academy, NOY 84711, Spec. 44177, ANNAPOLIS, MD. Bureau Yards & Docks, Dpt. Navy, Annapolis, Md. CD 6/7, under LB.
William E. Cramer Jr., Co., 2601 Connecticut Ave., N. W., Wash., D. C. CA superstructure (Annapolis, Md.).

SOUTH

BUILDINGS—BA

▲ **Fla., Miami**—STORES—BA 7/14—163rd Street Shopping Center, c/o Gamble, Pownall & Gilroy, archts., 1407 E. Los Olas Blvd., Fort Lauderdale, first 7 stores incl. 3 story bsmnt. 118x234 ft. department store, Total est. $15,000,000. D. E. Britt & Assocs., 1237 E. Los Olas Blvd., Fort Lauderdale, struc. engrs. Edward E. Ashley, 10 E. 40 St., New York, N. Y., mech. engr.

HEAVY CONSTRUCTION—LB & CA

▲† **Pittsburgh-Des Moines Steel Co.**, Neville Island, Pittsburgh, Pa., LB **$4,167,747,** 19 ft. pressure tunnel and laboratories, addns., alterations, LANGLEY FIELD, VA. National Advisory Comn. for Aeronautics, Langley Field, Va. CD 9/11/52.

▲ **FLORIDA**—Florida State Turnpike Auth., Dania,
FSTA—**H. E. Wolfe Constr. Co., Inc.**, St. Augustine, Fla., LB, **$397,785,** Contract 6.2, Section 6, grading and drainage approx. 6.524 mi. Martin and St. Lucie Counties;
FSTA—**Cone Bros. Contg. Co.**, Caeser and Cumberland Aves., Tampa, Fla., LB, **$542,423,** Contract 4.3, Section 4, grading, drainage approx. 7.8 mi. Sunshine State Parkway, Palm Beach and Martin Counties. CD 9/19/52.

▲ **J. E. Milam Constr. Co.**, 8940 1 Ave. S.. Birmingham, Ala., CA, **$2,065 000.** approx. 65 mi. of sanitary sewer lines, ST. PETERSBURG, FLA. City, City Hall, St. Petersburg, Fla. Bids May 12. CD 4/20.

BUILDINGS—LB & CA

▲ **Trinkle & Dobyns**, P.O. Box 6, Dublin, Va., LB **$1,380,400,** est. $1,300,000. (11 bidders) MALE CRIMINAL BLDG., Southwestern State Hospital, MARION, VA. Commonwealth of Va., State Hospital Bd., Dr. J. E. Barrett, Dir., 117 N. Ballard St., Richmond, Va. Bids June 7. CD 5/13.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲ **M. J. Boyle & Co.**, 2480 Elston St., Chicago, Ill., CA **$2,229,492.** (2 bidders), West Wrightwood Ave. Auxiliary sewer, CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids Apr. 18, awarded June 8. CD 4/27, under LB.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

† **Federal Government**
▲ **Project of $1,000,000 or over.**
ENR **Engineering News-Record**
CD **Construction Daily**
For additional reports see Construction Daily.

BUILDINGS—LB & CA

▲ **General Constr. Co.**, 2013 Dime Bldg., Detroit, Mich. CA Est. **$3,000,000.** SHOPPING CENTER, parking area, Eight Mile Rd. and DeQuindre St., DETROIT, MICH. Belmont Shopping Center, Inc., c/o Ben Agree, Inc., archt., 1140 Book Bldg., Detroit, Mich. CD 5/6.

▲ **Albert R. Thrower, Inc.**, Dexter St., Flint, Mich. Owner Builds. **$3,750,000.** Cathy Platt Subdivision, 300 brick HOMES, Center Rd. north of Davison Rd., FLINT, MICH.

WEST OF MISSISSIPPI

BUILDINGS—BA

▲ **Neb., Beatrice**—SCHOOLS—BA 7/8—Bd. Educ., Beatrice, four elementary schools. $1,215,000. Charles Shaver, Salina, Kan., archt. CD 12/30/54.

HEAVY CONSTRUCTION—LB & CA

▲† **Foley Bros., Inc.**, New York Bldg., St. Paul, Minn., **Winston Bros. Constr. Co.**, Northwestern Bank Bldg., Minneapolis, Minn., **Donovan Constr. Co.**, 1725 Carroll Ave., St. Paul, Minn., **C. F. Lytle Co.**, 250 Insuranec Exchange Bldg., Sioux City, Ia., and **Missouri Valley Constr. Co.**, Leavenworth, Kan., LB **$4,631,805,** outlet works, Stage IV, control substructures, Oahe Reservoir Proj., near Pierre, Inv. 25-066-55-112, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids June 8. CD 3/21.

▲† **U. S. Eng.**, P.O. Box 1229, Galveston, Tex., cancelled bids to have been opened June 23, School of Aviation Medicine, flight medicine laboratory and research laboratory shops, Brooks Air Force Base, ENG-41-243-55-41, SAN ANTONIO, TEX. CD 5/18.

▲† **Northeastern Engineering Co.**, 1311 St. Joe St., Rapid City, S. D. CA **$3,186,994.** airfield paving, runway lighting sys., Glasgow Air Force Base, Eng. 45-164-55-28, GLASGOW, MONT. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids May 19, awarded May 31. CD 5/25, under LB.

BUILDINGS—LB & CA

▲ **The Ralph M. Parsons Co.**, 617 S. Olive St. Los Angeles, Calif., CA, est. **$9,000,000.** design and construct CATALYTIC REFORMER and FEED PREPARATION UNITS, NEDERLAND, TEX. Pure Oil Co., Nederland, Tex. CD 11/5.

FAR WEST

HEAVY CONSTRUCTION—BA

▲† **Wash., Moses Lake**—EARTHWORK, PAVING, etc.—BA 6/30—Boeing Airplane Co., Conference Room 32 G-1 of the Engineering Building, Seattle, earthwork, paving and utilities, blast and dust control, Moses Lake Flight Center, Larson Air Force Base, for U. S. Air Force, Pentagon, Wash., D. C. Plans deposit $100. Narmore, Bain, Brady & Johanson, 904 Seventh Ave., Seattle Zone 4, archts.-engrs. adv. ENR 6/23. CD 3/3/54.

BUILDINGS—BA

▲ **Calif., Long Beach**—SCHOOL—BA 6/24—Long Beach Bd. of Educ., 715 Locust Ave., Herbert Hoover Junior High School, Downey Ave. and Greentop St., Lakewood, $1,425,000. Plans deposit $50. Kenneth Wing, 30 Linden Ave., Long Beach, archt. Van Alstein & McLean, 3916 Myrtle Ave., Long Beach, engrs. CD 11/8/54.

▲ **Calif., Sacramento**—JAIL—BA 7/13—Sacramento Co., 7 and Eye Sts., 6 story maximum security jail and remodeling existing jail $1,500,000. Harry Devine. 1012 Jay St., archt. CD 4/27.

BUILDINGS—LB & CA

Wall, Bartram & Sanford, Junction City, Ore., CA **$979,319.** (3 bidders), HIGH SCHOOL, BEND, ORE. Deschutes School Dist. No. 1, Bend, Ore. Bids June 7, awarded June 7. CD 5/25.

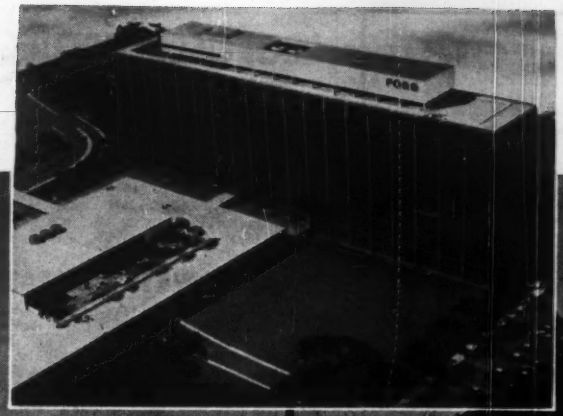
▲† **George A. Fuller Co.**, 3100 W. 8th St., Los Angeles, Calif., CA **$2,419,253.** hot test acceptance facility, rock field laboratory, Phase 11 at Santa Susana, for Atomic Energy Comn., CALIFORNIA. North American Aviation, Inc., 12214 Lakewood Blvd., Downey, Calif. Bids May 16. CD 5/20, under LB.

▲ **Tom E. Norcross**, 6053 Atlantic Ave., Long Beach, Calif., CA, **$1,160,000.** Cecil B. De Mille Junior High SCHOOL, LONG BEACH, CALIF. Long Beach Bd. of Educ., 715 Locust Ave., Long Beach, Calif. Bids May 20, awarded May 27. CD 5/27, under LB.

▲ **C. L. Peck**, 816 W. 5 St., Los Angeles, Calif., CA **$4,000,000.** 13-story rein.-con. OFFICE, 3325 Wi shire Blvd., LOS ANGELES, CALIF. Tishman Realty Co., 3460 Wilshire Blvd., Los Angeles, Calif. Victor Gruen, 135 S. Doheny Dr., Beverly Hills, Calif., archt. CD 9/15/54.

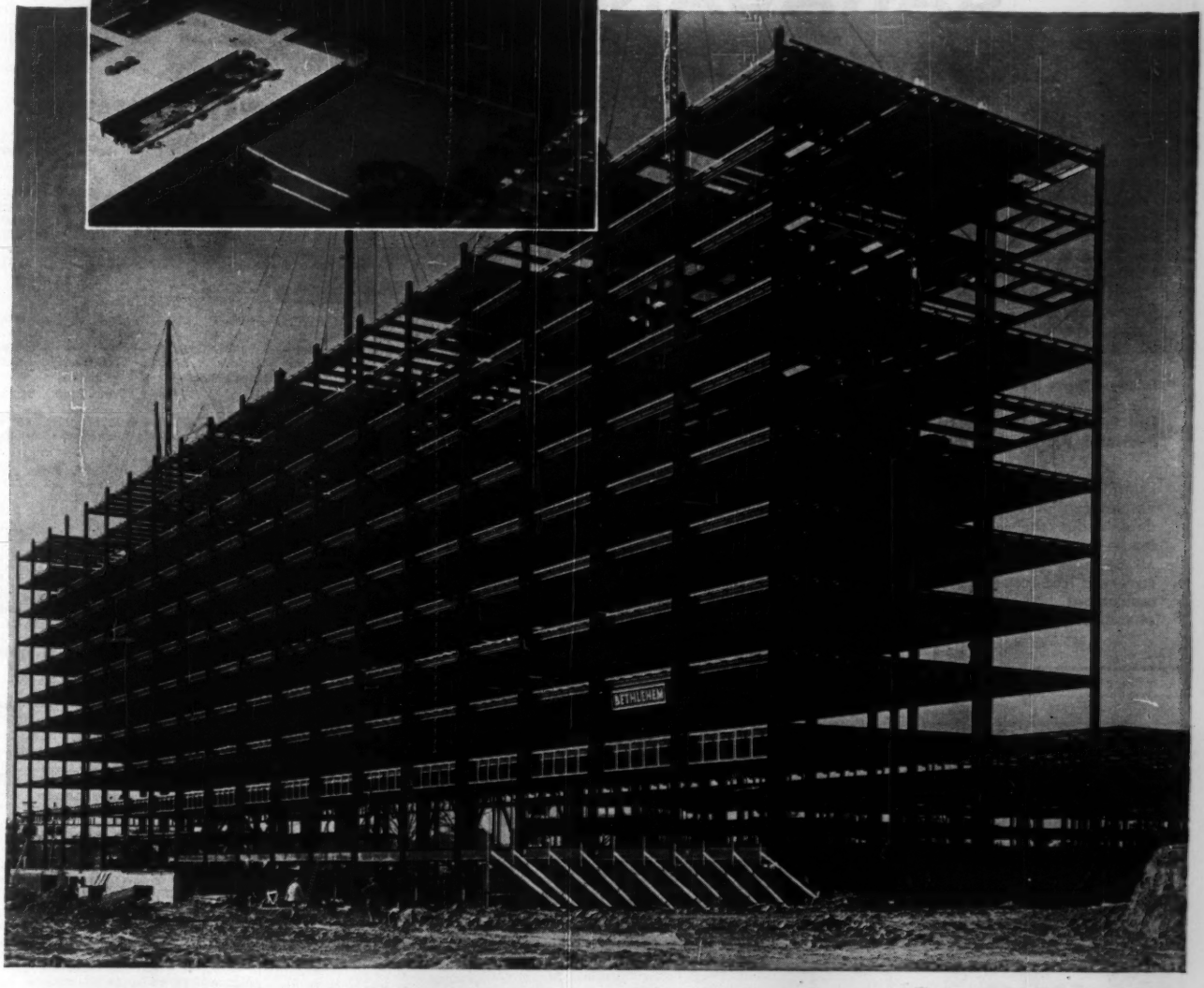
▲ **Model Homes, Inc.**, 137 S. Center St., Turlock, Calif., CA, **$2,000,000.** 160-HOME subdivision, TURLOCK, CALIF. J. Rickenbacher, 137 S. Center St., Turlock, Calif.

(Continued on page 64)



Some of the center's functional and esthetic attributes are indicated by this photograph of a model of the completed project. *Architect:* Skidmore, Owings & Merrill, New York City. *General Contractor:* Bryant & Detwiler Co., Detroit.

Photo of model by Ezra Stoller.



Ford Center Taking Shape in Michigan

This impressive steel skeleton, carrying the familiar "Bethlehem" sign, is the now-complete framework for Ford Motor Company's Central Staff Office Building—widely heralded as "the perfect decentralized work center." The completed structure will provide exceptionally pleasant working conditions for 3,000 Ford administrative employees.

Conveniently located in suburban Dearborn near the intersection of two arterial highways, the center will be surrounded by a park-like 20-acre plot. Dining rooms will be provided in a two-story employee services building.

The twelve-story tower has many interesting architectural features, including column-free floor space — as the outer columns are beyond the line of the porcelain-enamel curtain wall, while inside columns are within the service core. The office space is modular, based on 4-ft-8-in.-square units. Moving stairs will serve seven floors.

Bethlehem fabricated and erected a total of 9700 tons of steel for the office tower building and the adjoining employee services building.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation.

BETHLEHEM STEEL

BETHLEHEM STEEL

Ask these clients about

GAHAGAN

GEOPHYSICAL SURVEYS

LOCATION	CLIENT
East River, New York City	Consolidated Edison Company
Shelton Well Field	Bridgeport Hydraulic Company
The Connecticut Expressway	Ammann & Whitney, Engineers
Casco Bay Power Project	Central Maine Power Company
Delaware River Power Project	Jackson & Moreland Co., Engineers
Southeast Expressway, Mass.	Massachusetts Dept. of Public Works
Narrows Bridge Site, Brooklyn & Staten Is., N. Y.	Ammann & Whitney, Engineers
125th Street Bridge Site, N. Y. C.	Ammann & Whitney, Engineers
Narragansett Bay	New England Power Service Company
Baker River (Wash.) Hydraulic Development	Stone & Webster, Engineers
St. Lawrence Power Project	Sanderson & Porter, Engineers
Massachusetts Turnpike	Howard-Needles-Tammen & Bergendoff, Engineers
Garden State Parkway, New Jersey	Goodkind & O'Dea, Engineers
The Connecticut Expressway	Loomis & Sullivan, Engineers
The Connecticut Expressway	Knappen-Tippetts-Abbett-McCarthy, Engineers
Portland, Pa. Power Plant	Metropolitan Edison Company

Engineers planning heavy construction no longer need put up with spotty data about the subsoil. Gahagan (a leader in hydraulic dredging since 1898) now has seismic survey crews covering the country, using portable equipment. They provide a continuous and accurate picture of bedrock and the nature of the overburden—quickly, inexpensively. For further details, write, wire or telephone Ken Sandbach, Vice President, Geophysical Survey Division, Gahagan Construction Corp., 90 Broad St., New York 4, N. Y. Telephone: Whitehall 3-2558.

FOUNDATION CONSTRUCTION

CAISSONS SHAFTS

DRILLED AND UNDERREAMED

PIERS

SPECIAL DRILLING PROBLEMS

Wire or phone for a quotation on your next foundation job—ANYWHERE IN THE WORLD

McKINNEY DRILLING COMPANY

NACOGDOCHES, TEXAS

Phones: 4-8373 - 4-8477 • P.O. Box 190

McKIERNAN-TERRY

WIDE-RANGE LINE OF PILE HAMMERS AND EXTRACTORS

Now made in complete standardized line of 11 double-acting hammers, 5 single-acting hammers and 2 double-acting extractors. Also Sand Drain Equipment and Steam Generators.

Write for free descriptive Bulletins.

Also builders of coal and ore bridges and unloaders, and specially designed machinery.

McKIERNAN-TERRY CORP.
80 Richards Ave., Dover, N. J.

GUNITE

PNEUMATICALLY PLACED CONCRETE

dense—durable—high strength

for — Swimming Pools
Fireproofing Structural Steel
Lining Steel Stacks & Bunkers
Repairing Docks, Dams & Bridges
Reservoirs
Water Main Lining
Sewer Repairs
Pile Protection
Stucco Coatings
Insulating Concretes
Thin Walls
Lining Rock Tunnels
Prestressed Tanks
Pressure Grouting

We are Gunite contractors and engineers of long, extensive experience covering many hundreds of jobs. Get in touch with us for complete engineering data and estimates on your problem.

GUNITE CONSTRUCTION CORPORATION
420 LEXINGTON AVE., NEW YORK 17, N. Y.
MURRAY HILL 3-7699

(Continued from page 62)

PROPOSED PROJECTS

WATER SUPPLY

▲ Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, distr. pumping station at Chain of Rocks plant, St. Louis Water Division of Mississippi River at northern edge of city. $3,500,000. Black & Veatch, 4706 Broadway, Kansas City 2, Mo., and Horner & Shifrin, Shell Bldg., 1221 Locust St., Zone 3, consult. engrs. CD 10/21/53.

SEWERS, WASTE DISPOSAL

▲ Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, bldg. for use as rubbish incinerator, equip., etc. to be located adjacent to foot of East Grand Ave., $2,000,000; constr., equipping new garbage-grinding plant as an addn. to present plant at 15 and Gratiot Sts., $250,000; plans by Albert Osburg, 301 City Hall, Zone 3, constr. repair headquarters and service bldg. for Garbage Section Dpt. Streets & Sewers, incl. facilities for outdoor parking of trucks. $150,000. CD 5/31.

BRIDGES

▲ CALIFORNIA—Dpt. P. Wks., P. Wks. Bldg., Sacramento,
Contra Costa and Solano Counties—bridge over Carquinez Straits from Martinez to Benicia, $26,000,000. Legislature authorized construction. CD 7/31/51.

▲ CALIFORNIA—Dpt. P. Wks., P. Wks. Bldg., Sacramento,
Contra Costa and Solano Counties—bridge on Hy. 40 at Carquinez Straits, paralleling existing bridge, $47,000,000. CD 3/4/53.

▲ Mo., St. Louis—City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, imprv. MacArthur Bridge across Mississippi River between St. Louis, Mo. and East St. Louis, Ill., incl. new vehicular deck, toll station and service bldg. and wid'n. western approach adjacent to 7 Street, $2,000,000;
underpass at Missouri Pacific R.R. tracks vicinity of 8000 block South Broadway, $1,250,000;
bridges, viaducts for grade separation along proposed new hy. between old Rock Island R.R. tracks and city limits to point near Grand Blvd. and Market St., $3,100,000;
bridge across Missouri Pacific R.R. tracks on southwest Ave. near Columbia Ave., $500,000;
reconstr. Grand Blvd. bridge across Mill Creek Valley between Market and Rutger Sts., $800,000;
new bridge across Terminal R.R. Association north belt tracks in vicinity of West Florissant Ave., $250,000;
repairs, imprvs. to 12 Blvd., 14 St., Jefferson Ave., and Kingshighway viaducts over Mill Creek Valley railroad tracks, $800,000. CD 5/31.

▲ O., Dayton—City, City Hall, railroad track elevation program, northeast of central business district, with two overpasses on E. First St., others on Cooper St. and Monument Ave., reconstr. overpass at Pitt St., widen portion of E. First St. $7,736,589, Bids about August 29, 1955, Carl Shultheis, chief of city's bureau of structures, engr.; extend Keowee St. to Third St., incl. railroad overpass near Second and Montgomery Sts. $1,583,000, Scheduled for January 1957, John Hale, city engr. CD 1/8/47.

▲ Washington—City of Bremerton, City Hall, voted for reimposition of tolls on existing bridge for 2nd bridge over Port Washington Narrows $4,500,000. Tudor Eng. Co., 74 N. Montgomery St., San Francisco, Calif., consult. engr. Bids will be called by Washington Toll Bridge Auth. CD 7/22/53, under Wash., Bremerton.

▲ ONTARIO—Dpt Hys., Parliament Bldgs., Toronto,
Belleville—bridge over Trent River on Hy. 401 dual express road. $1,500,000.

STREETS AND ROADS

▲ Ala., Mobile—City, City Hall, paving streets, $11,000,000; access roads and approaches to Bankhead Tunnel, $3,500,000. CD 7/13/53.

▲ Mo., St. Louis—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3,
opening, imprv. new hy. from city limits east along former Rock Island R.R. right-of-way, thence adjoining Wabash R.R. tracks through Forest Park to connect with Forest Park Blvd. at Kingshighway, east along Forest Ave. to Market St. near Grand Blvd., $1,055,000;
wid'n., imprv. Chestnut and Locust Sts. 3 to 4 street, $335,000;
wid'n., imprv. Chouteau Ave. Broadway to 39 St., $250,000;
opening, imprv. new Hall St. Industrial Hy. East Grand Ave. to Maline Creek, $1,500,000;
wid'n., imprv. Grand Blvd. Arsenal to Rutger St., $890,000;
wid'n., imprv. Jefferson Ave. Natural Bridge Ave. to Chippewa St., $1,250,000;
constr. depressed street through Tower Grove Park from Magnolia Ave. to connection with Morganford Rd. at Arsenal St., $325,000;
wid'n., imprv. McCausland and Wabash Aves. between Manchester Ave. and River des Peres at Wabash Ave., $535,000;
wid'n., paving Morganford Rd., Arsenal St. to Gravois Ave., $650,000;

(Continued on page 66)

Now-out of Chrysler Corporation...come the most rugged trucks ever built!

Announcing new Dodge "Job-Rated" Trucks!

The **power line** with **full view** design!

NEW! Super Power-Dome V-8 engines—169 to 202 hp.—the world's most powerful low-tonnage V-8's—and the most dependable sixes!

NEW! Full-view design with biggest wrap-around windshield of any make! Wrap-around rear window available, too! You get greater safety, easier handling!

NEW! Higher payloads, new no-clutch transmissions, power steering and braking, fuel-saving overdrive! Plus smartly-styled interiors, colors, 2-toning! Over 100 new features!

Now on display at your dependable Dodge Truck dealer's!

SENIOR INDUSTRIAL SALES ENGINEER

Diesel Equipment

Unusual opportunity exists for top man in newly established division of nationally known concern located in Southern California.

Applicant must be highly qualified in automotive type Diesel engines or Diesel accessory equipment. He also must be capable of establishing a complete sales program and running an entire sales organization.

Write fully, stating experience and salary requirements.

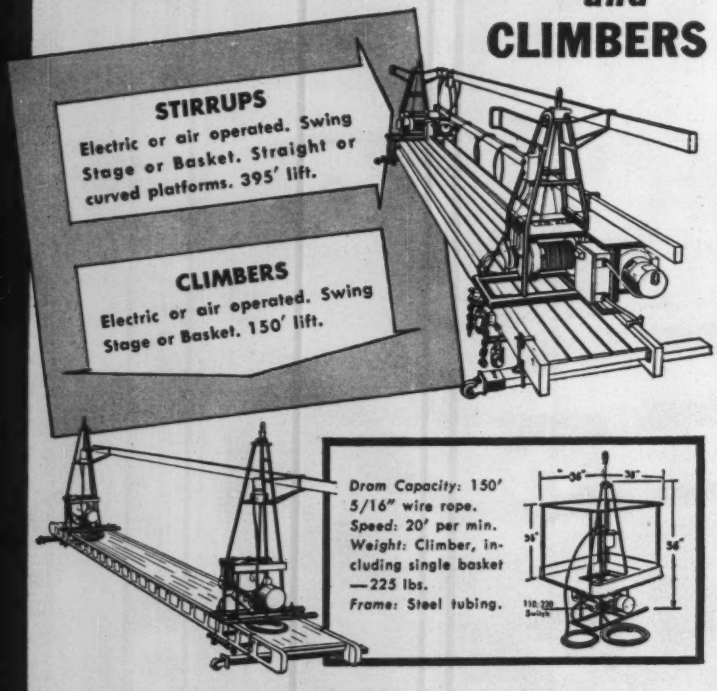
All inquiries held strictly confidential.

P-6719, Engineering News-Record
1111 Wilshire Blvd. Los Angeles 17, Calif.

SAFETY APPROVED

SALES • RENTALS • SERVICE IN PRINCIPAL CITIES

ALBINA MECHANICAL STIRRUPS and CLIMBERS


STIRRUPS
Electric or air operated. Swing Stage or Basket. Straight or curved platforms. 395' lift.
CLIMBERS
Electric or air operated. Swing Stage or Basket. 150' lift.
Drum Capacity: 150' 5/16" wire rope.
Speed: 20' per min.
Weight: Climber, including single basket —225 lbs.
Frame: Steel tubing.

ALBINA ENGINE & MACHINE WORKS, INC.
2100 N. Albina Avenue • MU 1131
Portland 12, Oregon

On Display
Western Plant
Maintenance Show
Los Angeles Booth 501

(Continued from page 64)

opening, imprv. Natural Bridge Ave., cut-off adjacent to Palm St., $85,000;
resurf., etc. North Broadway, Wall St. to city limits, $145,000;
wid'n., imprv. Park Ave., Broadway to Mississippi Ave., $575,000;
straightening, imprv. St. Louis Ave., Euclid Ave. to Goodfellow Blvd., $195,000;
opening, imprv. new relief street from 8400 block South Broadway to point near Gravois and Hampton Aves. in southwestern part of city, $900,000;
wid'n., imprv. Southwest Ave., Kingshighway to Arsenal St., $430,000;
wid'n., paving Spring Ave., Page Blvd. to Magnolia Ave., $675,000;
wid'n., imprv. Vandeventer Ave., Hunt Ave. to Kingshighway, $435,000;
wid'n., imprv. West Florissant Ave., Taylor Ave. to Riverview Blvd., $300,000;
wid'n., imprv. 14 St., Lafayette Ave. to Emmet St., $150,000;
wid'n., imprv. 14 St., Olive to Mullanphy St., $840,000. H. J. Horan, 325 City Hall, ch. engr. Sewers & Paving Sect. CD 5/31.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, **Westchester Co.**—constr. 2.8 mi. 48 ft. solid pavement Post Road Arterial, from south city line northeasterly along Post Rd. to point approx. 0.1 mi. south of N.Y., N.H. & H.R.R. bridge at Rye. $2,940,000. northbound traffic—constr. 36 ft. pavement and mall separation on new location, new bridges over Midland Ave. Arterial, N.Y., N.H. & H.R.R. and thruway, southbound traffic—use existing 36 ft. pavement and railroad bridge on Post Rd. 1.0 mi. from point south of railroad bridge northeasterly along Post Rd. and new location to north city line 1-way northbound on new location and 1-way southbound on Post Rd. at Rye, $850,000.
merge divided highway into solid 40 ft. pavement to match existing Post Rd. Post Road Arterial from north city line northeasterly along Post Rd. and new location to High St., 0.1 mi. Rye, $50,000.
constr. 48 ft. divided pavement on Peck Ave. and new location, constr. 48 ft. pavement on Midland Ave., connections with New England Thruway and Cross Westchester to Expressway, Midland Avenue Arterial, from point south of railroad bridge easterly and northeasterly on Peck Ave., new location and Midland Ave. to north city line 0.7 mi. at Rye, $660,000.
constr. 40 ft. pavement, Midland Avenue Arterial, from north city line northeasterly along Midland Ave. and Grace Church St. to Main St. (U. S. 1) 0.6 mi at Rye. $520,000.

▲ **Pa., Bristol**—Bristol Twps. Comn., Bristol, road and drainage program, $2,000,000.

AIRPORTS

▲† **Tex., Fort Worth**—AMMUNITION DUMP—U. S. Eng., Box 1600, ammunition dump near Carswell Air Force Base, $2,000,000. CD 6/18/52.

▲ **B. C., Dawson Creek**—RADAR DEFENSE BASE—Defense Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. radar defense base with housing staff on 60-acre site, near here. $3,000,000.

▲ **N. B., Newcastle**—HOUSING—Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S. 125-unit housing at R.C.A.F. Base, $1,000,000. S. C. Ings, c/o owner, regional engr.

PUBLIC BUILDINGS

▲ **Calif., Downey**—INFIRMARY—Los Angeles Co., Hall of Records, plans by Hugh Gibbs, 441 E. 1 St., Long Beach, 400-bed infirmary bldg., Rancho Los Amigos, Hondo, $1,720,000. M. A. Nishkian, 3754 Long Beach Blvd., Long Beach, consult. engr. CD 3/17/54.

▲ **Calif., Los Angeles**—FIRE STATIONS—City, City Hall, voted $4,000,000 bonds, 34 new fire stations. CD 3/14.

▲ **Idaho, Arco**—TEST REACTOR—Atomic Energy Comn., Idaho Operations Office, Idaho Falls, plans by Kaiser Engineers, 1924 Broadway, Oakland, Calif., test reactor, $12,000,000. General Electric Co., River Rd., Schenectady, N. Y., engr. CD 3/24/49.

▲ **Ill., Belleville**—HIGH SCHOOL—Belleville Twp. High School Dist., 201 Bd. Educ., Dr. Hal O. Hall, supt. Schools, 2600 W. Main St. voted bonds, township high school addns. $2,158,000. Charles E. King, 19 N. Illinois Ave., and Wesley Chorlton, 1229 N. 17 St., archts. CD 5/2.

▲ **Ill., Chicago**—HIGH SCHOOL—Bd Educ., 228 N. La Salle St., Zone 1, high school, 79 St. and Pulaski Rd. $2,500,000.

▲ **Ia., Cedar Rapids**—SCHOOLS—Bd. Educ., 346 2 Ave. S.W., plans by L. A. Daly Co., Insurance Bldg., Omaha, Neb., West Side High School and East Side High School. $5,950,000. Bids in July. CD 6/9/54.

▲ **Kan., Junction City**—SCHOOL—Bd. Educ., Junction City, $1,500,000 bond election Nov. 8, high school. Schmidt, McVay & Peddie, 1832 E. 2 St., Wichita, archts. CD 6/1.

▲ **Ky., Lexington**—HOSPITAL—State, Dpt. Purchases, Frankfort, plans by Thos. J. Nolan & Sons, Kentucky Home Life Bldg., Louisville, addn. to Eastern State Hospital, incl. receiving centr, $1,600,000. CD 10/12.

▲ **Mo., St. Louis**—HOSPITALS, etc.—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, Zone 3, constr., completing children's center to incl. bldg. for emergency care and diagnostic care and housing of children; staff bldg., $1,150,000; enlargement, rehabilitation of community center in Sherman Park, Easton Ave. west from Kings Highway, $350,000;

(Continued next page)

constr. complete community center bldg. vicinity 12 Blvd. and Lafayette Ave., $800,000; community center vicinity of 20 and Biddle Sts., $800,000; community center adjacent to John J. Cochran Apartments area vicinity 9 and Biddle Sts., $500,000; plans by Albert Osburg, 301 City Hall, Zone 3, hospital for indigent patients suffering from degenerative and metabolic diseases, $4,000,000; remodeling existing bldg. and constr. new laundry and garage addn. to St. Louis Chronic Hospital, 5600 Arsenal St., $802,000; laboratory for Max C. Starkloff Memorial Hospital adjacent to Lafayette and Mississippi Aves., $500,000; ambulance garage and service bldg. and parking area adjacent to Max C. Starkloff Memorial Hospital, Lafayette and Mississippi Aves., $325,000; remodeling receiving rooms, addnl. ward space, etc. Homer G. Phillips Hospital on Whittier St., $365,000; city workhouse with auxillary bldgs., etc., $3,000,000; health center, $490,000; health center, near Cass and Jefferson Aves., $775,000; children's bldg. of modern design with non-jail atmosphere, $1,000,000. CD 5/31.

▲ **Mo., St. Louis** — AUDITORIUM-GYMNASIUM — Bd. Educ., V. Harry Rhodes, comr. School Bldgs., 911 Locust St., Zone 1, combined auditorium-gymnasium and field house for technical high school on Northrup Ave. west of Kingshighway. $1,459,000. CD 5/31.

▲ **Neb., Lincoln**—HOSPITAL—State Bd. Control, Capitol Bldg., Lincoln, plans by Unthank & Unthank, 526 Sharp Bldg., tuberculosis hospital, $600,000; plans by Schaumberg & Freeman, 614 Federal Security Bldg., security hospital, $800,000, Lincoln State Hospital. CD 4/14.

▲ **N. J., Chatham**—SCHOOL—Chatham Bd. Educ., plans by Epple & Seaman, 901 Broad St., Newark, high school. $1,500,000. CD 1/12.

▲ **N. Y., East Meadow**—HIGH SCHOOL—Bd. Educ., East Meadow, Junior-Senior High School. $5,340,000. CD 10/16/53.

▲ **N. Y., Great Neck**—SCHOOLS—Bd. Educ., 345 Lakeville Rd., plans by LaPierre, Litchfield & Partners, 292 Madison Ave., New York, Zone 17, two groups of buildings comprising Great Neck Junior-Senior High School on tract between Lakeview Rd. and Expressway Exten. $7,900,000.

▲ **N. Y., Seaford**—HIGH SCHOOL—Bd. Educ., Seaford, Junior-Senior High School. $3,000,000.

▲ **N. Y., Valley Stream**—SCHOOL—Bd. Educ., Union Free School Dist. No. 13, Valley Stream, school constr. $1,990,000.

▲ **Pa., High Spire**—ADMINISTRATION—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, plans by Lawrie & Green, 321 N. Front St., Harrisburg, administration bldg., Harrisburg-East Interchange. $2,000,000.

▲ **Tex., Crockett**—PRISON BLDG.—Texas Prison Bd., State Admin. Bldg., Austin, addnl. building for 500-men at Eastham farm. $1,000,000.

▲ **Tex., Denver City**—HIGH SCHOOL—Sligo Independent School Dist., Denver City, plans by Butler-Kimmel Co., 412 Avenue M, Lubbock, high school. $1,000,000. CD 5/17.

▲ **Tex., Houston**—HOME ECONOMICS, etc.—University of Houston, 705 Fannin St., home economics and food research center. $1,000,000.

▲ **Tex., Huntsville**—PRISON UNIT—Texas Prison Bd., State Admin. Bldg., Austin, prison unit, near Brazos and Trinity Rivers, $4,500,000; building for 350 men, $900,000; constr. 400-men prison unit at Wynne farm, $1,600,000. CD 11/15/50.

▲ **Tex., Midland**—SCHOOLS—Midland Independent School Dist., Midland, plans by Pierce, Norris, McCutchan, Page & Assocs., 603 W. Texas Ave., constr. Third Junior High School, $1,500,000; high school addn., $500,000. CD 5/24.

▲ **Wash., Edmonds**—SCHOOL—School Bd., Edmonds, voted bonds, Senior High School. $2,100,000. CD 4/21.

▲ **B. C., Vancouver**—CIVIC AUDITORIUM—City, City Hall, plans by R. T. Affeck, Jean Michaud, G. Desbarats, Hazen Sise & D. F. Lebensold, 4350 Sherbrooke St., Montreal, Que., civic auditorium, $2,750,000. CD 12/18/53.

▲ **N. B., Renous**—HOUSING—Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S. 125-unit housing at R. C. Navy Base. $1,000,000. C. S. Ings, regional engr.

▲ **Ont., Ottawa**—CITY HALL—City, city hall, Connaught Place, $2,617,000. CD 11/9/43.

COMMERCIAL BUILDINGS

▲ **Calif., Corte Madera**—HOME—Billings-Rentz Co., Tamalpais Ave., Corte Madera, 86-home tract. $1,548,000. Pinnett, Parez & Hutchison, 58 Sutter St., San Francisco, consult. engrs.

▲ **Calif., Oakland**—OFFICE—Bayshore Constr. Co., 744 Falger Ave., Berkeley, 10 story office bldg., connecting to Times Bldg. $5,000,000.

▲ **Calif., Torrance**—DWELLINGS—G. & G. Constr. Co., 356 S. Sepulveda Blvd., Manhattan Beach, 99 frame, stucco dwellings, Tract 20873. $1,000,000.

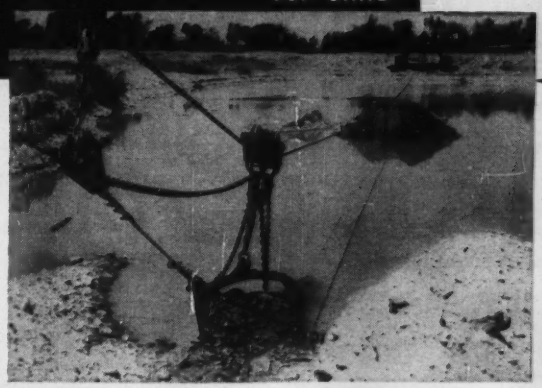
▲ **Conn., Stamford**—SCHOOL—Catholic Diocese of Bridgeport, c/o J. Gerald Phelan, archt. 211 State St., Bridgeport, 1,000 pupil high school Newfield Ave. $1,750,000.

▲ **Fla., Miami**—HOTEL—Harry Dinnerstein, 6401 N. Bay Rd. Miami Beach, hotel at Bal Harbour oceanfront strip, Bal Harbour, $5,000,000.

(Continued next page)

the pit: *tough*... 70% ROCK 30% SAND

the machine: Sauerman 2½-cu. yd. slackline cableway excavator



the result:

"..a full bucket every trip"

Another actual field report—Helena Sand & Gravel Co., of Helena, Montana, switched to this Sauerman equipment in 1946. It's been in operation since then . . . successfully performing difficult underwater excavation of rock and colloidal sand where other equipment had failed.

Sauerman Slackline Cableways span water, bogs or pits . . . reach far, dig deep, lift and carry loads to hoppers or cone piles. However tough the pit, Sauerman equipment brings in a good load every trip.

With a Sauerman Slackline Cableway, one man—in safe position—operates a single machine . . . does the complete job, quickly, efficiently, economically! Sauerman Slackline Cableways range from ⅓ to 3½ cu. yds. —span distances up to 1,000 feet . . . handle such materials as sand, gravel, clay, peat, ore and rock.

Write today for more information, including these handy field reports and catalog:

FR-216 Easy Excavating in a Tough Pit
FR-213 Cleaning Ponds Without Draining
FR-102 Digging Gravel From a River
Catalog C Sauerman Slackline Cableways

SAUERMAN BROS. INC.
632 S. 28th Ave., BELLWOOD, ILL.

▲ **Ga., Atlanta**—SHOPPING CENTER—Norwood Realty Co., Forsyth Bldg., shopping center, Buford Hy. adjacent to Drew Valling Subdivision, $1,500,000.

▲ **Ga., Sandy Springs**—HOMES—Morris A. Bryan, 1690 Stanton St. S.W., Atlanta, 58 homes, North Hampton Hills. $1,000,000.

▲ **Ga., Sandy Springs**—HOMES—MK Construction Co., Box 8051, Station F, Atlanta, 140 houses new subdivision known as Hammond Hills, $2,500,000-$3,000,000.

▲ **Mo., St. Louis**—SUPERMARKET—Mrs. Mary Goldstein, c/o United Lumber Co., 1401 S. Hanley Rd., Clayton, Zone 5, plans by Lester W. Penn, 5 Northcote St., Brentwood,. Zone 17, 85x151 ft., brick, steel, concrete supermarket, 4315 Natural Bridge Ave. to be leased to National Food Center Stores, 1106 Industrial Drive, St. Louis 10, Mo., addnl. bldgs. planned for shopping center in block bounded by Natural Bridge, Newstead, Sacramento and Clarence Aves. $1,000,000. CD 6/2.

▲ **N. J., Princeton**—OFFICE—Princeton Municipal Improvement, Atty. J. H. Brickley, Inc., Palmer Square, office. $1,500,000.

▲ **N. Y., Tarrytown** — MOTEL — Sheraton Corp. of America, 480 Atlantic Ave., Boston, Mass., motel opposite exit from New York State Thruway Bridge, $2,225,000.

▲ **Pa., Aliquippa**—SHOPPING CENTER—Sheffield Heights Shopping Center, Aliquippa, plans by Hyman Rosenberg, 813 Berger Bldg., Pittsburgh, 1 story, brick, block, steel frame shopping center. $1,000,000.

▲ **Pa., Broomall**—SHOPPING CENTER, etc.—Ralph Bodek, 160 Long Lane, Upper Darby, plans by George W. Neff, 1520 Locust St., Phila., shopping center and parking area, $10,000,000.

▲ **Pa., Bryn Mawr** — SCIENCE — Bryn Mawr College, Bryn Mawr, 2 science bldgs. on campus. $1,600,000.

▲ **S. C., Greenville**—DORMITORY, etc.—Bob Jones University, Dr. Bob Jones, Pres., girls dormitory, fine arts bldg., gymnasium and more faculty housing, $2,000,000.

▲ **Tex., Duncanville**—DWELLINGS—T. K. Irwin, Sr., Irwin Keasler Bldg., Dallas, 15 dwellings. $410,000; 7 dwellings, $390,000; 11 dwellings, $375,000; 13 dwellings, $386,175; 9 dwellings, $380,450; 17 dwellings, $398,775; north of city limits.

▲ **Tex., El Paso**—DWELLINGS—Holiday Homes, c/o L. Blackman, Box 23, Mineral Wells, 20 brick veneer dwellings, $350,000; 27 masonry dwellings, $372,600; 34 brick dwellings, $464,000 in Milagro Hills.

▲ **Tex., Farmers Branch**—DWELLINGS—Cato Corp., c/o C. Grady Cates, Jr., 9747 Harry Hines Blvd., Dallas, 38 frame dwellings, $380,000; 28 brick veneer dwellings, $349,600; 33 frame, brick trim dwellings, $378,615; 36 frame dwellings, $385,000; 26 brick veneer dwellings, $350,910; 30 frame, masonry dwellings, $365,190, on north fringe of Farmers Branch 2,000 dwellings, 500 acre proj.

▲ **Tex., Grand Prairie**—DWELLINGS—R. W. Baxter, c/o Rio Grande Natl. Life Insurance Co., Bldg., Dallas, Group I, 15 dwellings, $368,000; Group J, 12 dwellings, $359,600; Group K, 15 dwellings, $374,650; Group L, 21 dwellings, $385,000, in 136-acre tract adjacent to city at 7th St.

▲ **Tex., Grand Prairie**—DWELLINGS—Hub Hill & Assocs., 2121 N. Field St., Dallas, 28 dwellings, $344,000; 32 dwellings, $384,000; 30 dwellings, $364,000; 14 dwellings, $350,000; 15 dwellings, $375,000; 17 dwellings, $398,500, west of Dallas, inside limits of Grand Prairie.

▲ **Tex., Houston**—SHOPPING CENTERS—Link Road Shopping Center, c/o Emma Levy, Shamrock-Hilton Hotel, plans by J. Hale Smyth, archt.-consult. engr., 2422 Rice Blvd., 150,000 sq. ft. masonry, steel Shopping Center, Sec. No. 1, $1,000,000; 150,000 sq. ft. masonry, steel Shopping Center No. 2, $1,000,000, at Stella Link Rd. and S. Main St. area.

▲ **Tex., Houston**—DWELLINGS—C. B. Faulkner & Frank Thielen, West Bldg., 25 dwellings, $350,000; 30 dwellings, $360,500; 31 dwellings, $365,000; 36 dwellings, $389,805; 28 dwellings, $345,950; 34 dwellings, $379,000 in portion 460-acre tract vicinity Clark and Anderson Rds., near here.

▲ **Tex., Houston**—DWELLINGS—Walter M. Mischer & Assocs., 6925 Navigation Blvd., Schedule 10, 30 dwellings, $348,000; Schedule 11, 36 dwellings, $376,185; Schedule 12, 33 dwellings, $367,500; Schedule 13, 41 dwellings, $410,000; Schedule 14, 38 dwellings, $378,118; Schedule 15, 40 dwellings, $396,625, in 460-acre tract, Hiram Clark and Anderson Rds.

▲ **Tex., Houston**—APARTMENT—Owner c/o Wyatt C. Hedrick, 5201 Fannin St., Houston, Tex., 16 story 198-unit apartment, Hermann Dr. fronting Hermann Park, $5,000,000. Wyatt C. Hedrick, 5201 Fannin St. Houston, Tex. and Sylvan Bien, 330 W. 46 St., New York, N. Y., consult. engrs.

▲ **Tex., Houston** — OFFICE and GARAGE — Piermain Corp., c/o Leopold Meyer, Bd. Chn., Meyer Bros., 1511 Prewton St., and Wm. A. Smith, 409 San Jacinto Bldg., plans by Eugene Werlin, 3501 Buffalo Dr., office bldg. $10,000,000; auto parking garage, adjacent to 10 story office and connected by a tunnel, $500,000.

▲ **Tex., Houston**—DWELLINGS—Woodshire Building Co., c/o Lewis O. Tyra & Dan McCrary, 5519 Lawndale St., plans by Dunaway & Jones, 2425 Ralph St., and Crochet & Carroll, 4574 Griggs St., 27 dwellings, $365,000; 38 dwellings, $419,750; 25 dwellings, $350,000; 35 dwellings, $398,610, in Third Sect. CD 5/19.

▲ **Tex., Jacinto City**—DWELLINGS—J. B. Bolin, pres. State-Wide Lumber Co., 4120 Lyons St. and O.R. Winter, Developer-Builder, 2406 S. MacGregor St., Houston, 43 dwellings, $398,125; 45 dwellings, $415,000; 40 dwellings, $381,215; 28 dwellings, $347,625; 36 dwellings, $375,000; 33 dwellings, $369,910; 30 dwellings, $360,000; 91-acre tract in Market St. Road.

▲ **Tex., Lancaster**—DWELLINGS—Gus Wright & Assocs., The Wright Investment Co., 711 N. Pearl St., Dallas, 40 dwellings, $415,000; 26 dwellings, $351,000; 32 dwellings. $373,610; 36 dwellings, $382,000; 28 dwellings, $367,075; 36 dwellings, $391,500, in 150-acre tract, north of Pleasant Run Rd.

▲ **Tex., Longview**—HOTEL, etc—Earl Hollingsworth & Lee Travis, Hotel Longview, 6 story, 50-room, full bsmnt., masonry hotel addn., swimming pool; $750,000; remodeling 5 story garage auto parking bldg. into a 5 story office, two of the floors for parking and upper 3 for office spaces, masonry constr. $750,000.

▲ **Tex., Lubbock**—DWELLINGS—Carlton Co., c/o Carl Hensely, 3304 24 St., 16 all-brick dwellings, $350,000; 20 masonry dwellings, $367,115; 24 all-masonry dwellings, $372,160; 28 all-brick dwellings, $382,500, area Quaker Ave. and 47 St.

▲ **Tex., Lubbock**—DWELLINGS—E & R Lumber Co., 2726 Texas Ave., (A) 30 frame dwellings, $349,175, (B) 38 frame dwellings, $377,610, (C) 41 frame dwellings, $388,400, (D) 35 frame dwellings, $365,000, (E) 33 frame dwellings, $369,050.

▲ **Tex., Odessa**—SHOPPING CENTER—MSD Rentals, Odessa, plans by Taylor & Devlin, 1403 N. Graham St., shopping center. $2,000,000.

▲ **Tex., Pasadena**—DWELLINGS—Wm. D. Morse, Morse Wholesale, 3302 Canal St., Houston, (A) 35 frame dwellings, $350,000, (B) 41 frame dwellings, $389,750, (C) 30 frame, brick trim dwellings, $345,000, (D) 33 frame, masonry trim dwellings, $369,000, (E) 38 frame, asb. siding dwellings, $381,050, (F) 43 frame dwellings, $410,000 on LaPorte Road behind Marvin Henry's Tanglewood Park Subdivision.

▲ **Tex., Pasadena** — DWELLINGS — Parkwood Addition c/o C. O. Beeler, 4715 Calhoun St., Houston, 38 dwellings, $388,000; 43 dwellings, $416,515; 33 dwellings, $367,175; 36 dwellings, $382,075; 30 dwellings, $345,800; 35 dwellings, $372,400, addnl. development in 766-acre Parkwood Area.

▲ **Tex., Pasadena**—DWELLINGS—Parkwood Subdivision c/o C. O. Beeler of Beeler Lumber Co., 4715 Calhoun St., Houston, plans by Crockett & Carroll, 4574 Griggs St., Houston, Job 1, 40 dwellings, $369,145; Job 2, 37 dwellings, $361,250; Job 3, 35 dwellings, $345,915; Job 4, 51 dwellings, $510,000; Job 5, 45 dwellings, $591,475; Job 6, 38 dwellings, $368,000; Job 7, 48 dwellings, $397,775; Job 8, 43 dwellings, $375,800, another phase of development in Parkwood.

▲ **Tex., San Antonio**—DWELLINGS—Orts Constr. Co., 939 Rittiman Rd., plans by Hesson May & J. Harris Hein, 2108 N. Main Ave., 25 brick front dwellings, $364,925; 21 frame, brick front dwellings, $345,000; 31 concrete slab, frame dwellings, $380,600; 28 concrete slab, masonry dwellings, $370,000; 34 frame, brick trim dwellings, $374,000; 36 frame, concrete slab dwellings, $396,500, in Wilshire Terrace and Wilshire Village.

▲ **Tex., Tyler**—HOSPITAL—East Texas Tuberculosis Hospital, c/o Dr. Sam Topperman, supt., c/o Broad & Nelson, archts., 918 Reserve Loan Life Bldg., Dallas, 6 to 7 story, 350-bed brick hospital. $1,250,000. CD 5/5.

▲ **Wash., Cosmopolis**—HOMES—A. D. Johns, 2321 S. W. 170 St., Seattle, 100 homes. $1,000,000.

▲ **Alta., Edmonton**—OFFICE—Imperial Oil Ltd., Edmonton, plans by Dewar, Stevenson & Stanley, 618 Northern Hardware Bldg., office on site of Kingsway between 109 and 110 Sts. $1,000,000.

▲ **Ont., Toronto**—OFFICE, etc.—Grand Union-Carrolls' Ltd., 76 Biggar Ave., Hamilton, plans by Husband, Robertson & Wallace, 30 Hunter St. W., Hamilton, office and warehouse, 55-acre site on Kipling Ave. $2,000,000.

▲ **Ont., Toronto**—CHURCH—Greek Orthodox Church of St. George, 115 Bond St., plans by Alan B. Crawford, Lakeshore Hy. E., Clarkson, church, incl. community center, and library, Elm Ave. and Mt. Pleasant Rd. $1,000,000.

▲ **Ont., Toronto**—OFFICE—Royal Bank of Canada, 10 Kings St. E., office, King St. W. near Young St. $2,000,000.

INDUSTRIAL BUILDINGS

▲ **Ark., Okay**—PLANT—Ideal Cement Co., Denver National Bank, Denver, Colo., enlargement cement mfg. plant. $3,500,000.

▲ **Calif., Belmont**—PLANT—Dalmo Victor Co., 1414 El Camino Real, San Carlos, 180,000 sq. ft. electronics mfg. plant, $1,200,000.

▲ **Calif., Los Altos**—PLANT—Permanente Cement Co., 1924 Broadway, Oakland, cement plant addn. kiln, grinding equipment and storage area, $4,000,000. Kaiser Engineers, 1924 Broadway, Oakland, consult. engrs.

▲ **Calif., Redwood City**—PLANT—Ideal Cement Co., Denver National Bank, Denver, Colo., enlarging cement mfg. plant. $6,000,000.

▲ **Colo., Boettcher**—PLANT—Ideal Cement Co., Denver National Bank, Denver, enlarging cement mfg. plant. $4,500,000.

▲ **Ill., Quincy**—PLANT—Motorola, Inc., 4545 W. Augusta Blvd., Chicago, plant, 35-acre tract in Walton Heights, $1,500,000.

▲ **Kan., Kansas City**—CATALYTIC REFORMER UNIT—Phillips Petroleum Co., 2029 Fairfax Trafficway, Kansas City, Kan., 16,000 bbl. capacity daily catalytic reformer unit. $3,350,000.

▲ **La., Baton Rouge**—PLANT—Ideal Cement Co., Denver National Bank Bldg., Denver, Colo., enlarging cement mfg. plant. $3,500,000. CD 11/20/50.

▲ **La., New Orleans**—PLANT—Ideal Cement Co., Denver, National Bank Bldg., Denver, Colo., enlarging cement mfg. plant. $1,350,000.

▲ **Mont., Trident**—PLANT—Ideal Cement Co., Denver National Bank Bldg., Denver, Colo., cement mfg. plant. $6,000,000.

▲ **N. Y., New York**—OIL TERMINAL—Gotham Oil Terminal, Inc., c/o S. M. Bernstein, pres., Premium Coal & Oil Co., Inc., 200 Morgan Ave., Brooklyn, Deepwater fuel oil terminal on North River waterfront between W. 54 and W. 56 Sts. $1,000,000.

▲ **Okla., Ada**—PLANT—Ideal Cement Co., Denver National Bank Bldg., Denver, Colo., cement mfg. plant, $6,500,000.

▲ **Pa., Fort Washington**—INDUSTRIAL CENTER—Owner, c/o Delaware Valley Industrial Properties Corp., 731 Meetinghouse Rd., Jenkintown, industrial center, $2,500,000.

▲ **Pa., Phila.**—INDUSTRIAL CENTER—Eavenson & Levering Co., 301 Jackson St., Camden, N. J., industrial center, incl. several buildings and railroad trackage, $2,500,000.

▲ **Pa., Phila.**—SHOP, etc.—Phila. Transportation Co., 820 W. Dauphin St., plans by Thalheimer & Weltz, 1325 Walnut St., maintenance shop and office bldg. $4,500,000.

▲ **Tex., Echo**—PLANT—Texas Portland Cement Co., Echo, cement mfg. plant. $2,500,000.

▲ **Tex., Houston**—PLANT—Ideal Cement Co., Gulf Div., San Jacinto Blvd., cement mfg. plant expansion. $8,000,000. CD 5/23.

▲ **Tex., Orange**—PILOT PLANT—E. I. duPont de Nemours & Co.. Orange, pilot plant at Sabine River Works to mfr. polyethylene resin. $1,500,000. CD 6/18/52.

▲ **Wyoming**—URANIUM MILL—New Park Mining Co., W. H. Cranmer, Pres., Riverton, uranium mill to be built in Gas Hills of Wyoming, between Riverton and Casper, Fremont Co. $6,000,000.

▲ **Alta., Medicine Hat**—PLANT—North West Nitro-Chemicals Ltd., c/o Commercial Solvents Corp., New York, N. Y., 100,000 sq. ft. fertilizer plant and gas feeder pipe line. $23,000,000. Ford, Bacon & Davis, Inc., 39 Broadway, New York, N. Y., consult. engr.

▲ **Ont., Kingston**—PLANT EXPANSION—Aluminum Co. of Canada Ltd., Sun Life Bldg., Montreal, Que., project abandoned, plant expansion on 80-acre site, $10,000,000. CD 5/31.

▲ **Que., Havre St. Pierre** — MINE DEVELOPMENT — Spar-Mica Corp., New Birks Bldg., Montreal, feldspar mine development, near here, incl. timber crib, and other bldgs., $1,000,000. C. D. Howe Co. Ltd., 1421 Atwater Ave., Montreal, consult. engrs.

UNCLASSIFIED

▲† **California**—RADAR STATION, etc.—U. S. Eng., 180 N. Montgomery St., San Francisco, radar station and supporting facilities, Santa Cruz Co. $1,000,000.

▲ **Calif., Los Angeles**—STADIUM—City, City Hall defeated $4,500,000 bonds, baseball stadium. CD 3/15.

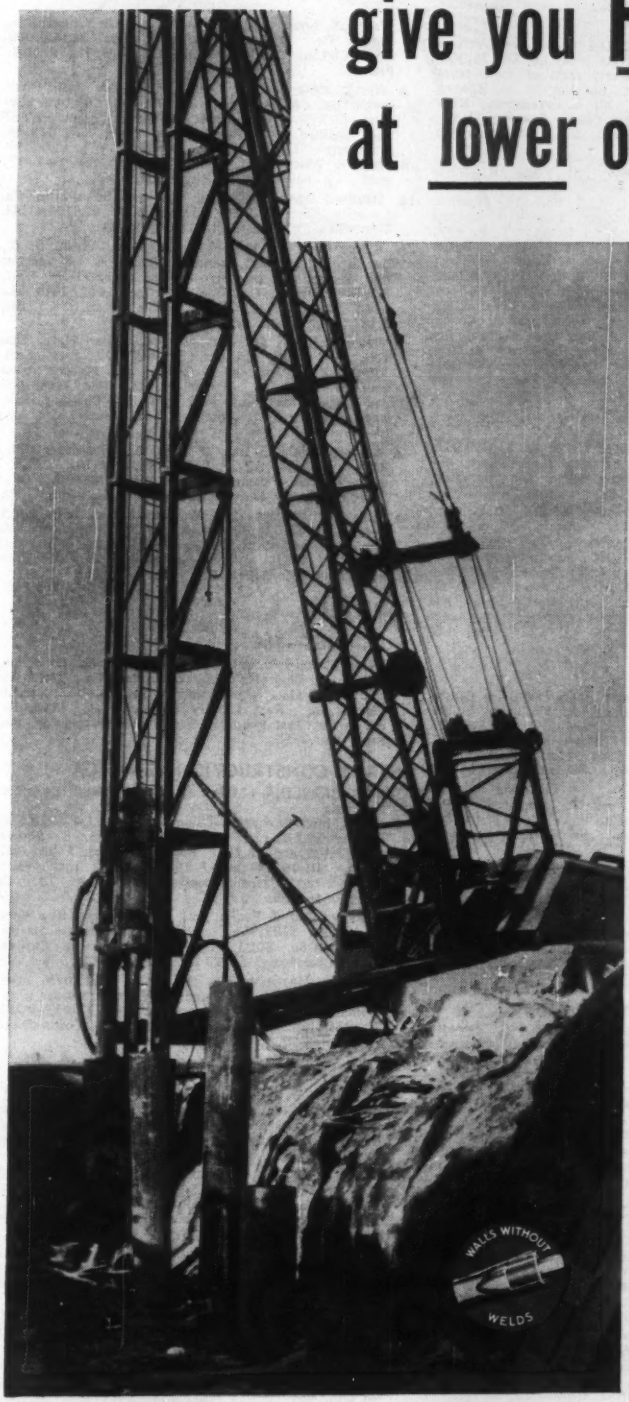
▲ **Calif., Los Angeles**—ZOOLOGICAL GARDENS, etc. City, City Hall, defeated $35,500,000 bonds zoological gardens, new zoo, parks, beaches, playgrounds, swimming pools, and aquarium. CD 3/15.

▲ **Mo., St. Louis**—PARKS and SWIMMING POOLS—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, imprv. Barrett Brothers Park, $90,000; imprvs. DeSoto Park vicinity of 20 and Carr Sts. and Cass Ave. and Sarsfield Place, $200,000; development of Dunbar Park vicinity of Garrison Ave. and Branther Place, $500,000; imprvs. to Northampton Park vicinity of Hampton, Fyler and Marquette Aves., $100,000; development, imprv. of Willmore Park vicinity of Hampton Ave. and Loughborough St., $270,000; imprv. park at Euclid and Ashland Aves., $80,000; development of new park in vicinity of Jamieson and Pernod Aves. in St. Louis Hills Section, $85,000; development of new park in vicinity of Lillian Ave. and Oriole St., $75,000; development of new park on 12 Blvd. between Park and Lafayette Aves., $1,200,000; development of new public park adjacent to 19 and Cole Sts., $150,000, Stuart M. Mertz, 7908 Bonhomme Ave., Clayton 24, Mo., and Layton, Layton & Rhodes, 1221 Locust Sts., St. Louis, Zone 3, assoc. landscape archts.; swimming pool in Fairground Park adjacent to Natural Bridge and Vandevanter Ave., $300,000; rehabilitation imprv. swimming pool of Marquette Park vicinity of Compton Ave. and Gasconade St., $275,000; exten., imprv. Tandy Park, $410,000; playfields and other recreational facilities at Murphy Playgrounds, 18, 20, Madison Sts. and Cass Ave., $750,000; development of playground facilities in John J. Cochran Apartments area vicinity 8 and Biddle Sts., $135,000; rehabilitation, imprv. recreational facilities for Tower Grove Park, $125,000; installing night lighting facilities for baseball in various city parks, $270,000; hard surfacing of tennis courts in city parks, $138,000. CD 5/31.

▲ **Texas**—TRANSMISSION LINES—Brazos Electric Power Co-operative Amicable Bldg., Waco, 146 mi. new high voltage lines, 17 sub-stations, system imprvs. to existing factilities, Waco area, $2,310,000.

NATIONAL SEAMLESS STEEL PIPE PILES

give you Higher loading capacity at lower over-all cost



Here's why USS NATIONAL Seamless Steel Pipe Piles are actually *low in cost* per ton of load carried:

1 MAXIMUM STRENGTH FOR MINIMUM METAL—A circular cross section is structurally superior to any other shape for compression loading. National Seamless Pipe Piles have a circular cross section.

2 HIGHER YIELD STEELS—High tensile and compressive yield strength without loss of ductility or weldability are available in National Seamless Pipe Piles.

3 LOW COST FOR HIGHER LOADS—Not only by shape and steel strength are seamless pipe piles outstanding, they also provide a hollow form which can be filled with concrete. The sum of these qualities gives National Seamless Pipe Piles low cost for high bearing capacity.

4 HARD, FAST DRIVING—Large hammers are the more efficient driving means—but only if the pile can take their punishment. National Seamless Pipe Piles can, and also provide positive penetration through the most rugged driving conditions.

5 CHECK AND DOUBLE CHECK—Alignment and pile condition can be checked simply by lowering an electric light into the driven pipe pile. In open end pipe piles, the bearing area itself can be checked and an even bearing assured.

National Tube engineers would like to discuss your foundation problems with you, whether they concern roads, bridges, buildings, etc. They can show you how service-tested NATIONAL Seamless Steel Pipe Piles have saved time and money in many of the country's most exacting projects.

NATIONAL TUBE DIVISION
UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NATIONAL Seamless PIPE AND TUBES

USS

SEE The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

UNITED STATES STEEL

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BUILDINGS—BA

▲ **N. H., Newington-Portsmouth**—PLANT—BA 6/27—Simplex Wire & Cable Co., c/o Charles T. Main, Inc., engr., 80 Federal St., Boston, Mass., invited list of bidders, 100,000 sq. ft. plant addn. $1,000,000.

HEAVY CONSTRUCTION—LB & CA

▲ **MASSACHUSETTS** — Massachusetts Turnpike Auth., 80 Boylston St., Boston,
M. DeMatteo Constr. Co., 200 Hancock St., Quincy, Mass. CA $7,206,511. est. $7,000,000. Contr. 51-093 hy. and bridge constr., Hopkinton, Westboro, Southboro, Ashland and Framingham. CD 5/18, under LB.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., Boston,
A. V. Taurasi Co., Inc., 139 Jaques St., Somerville, Mass. CA $2,408,305 est. $2,400,000. Proj. 900, grade separation and reconstr. Hy. Squires Bridge to Cross St., Somerville. CD 6/1, under LB.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Bethlehem Steel Co., 75 Federal St., Boston, Mass. CA $3,591,265, est. $3,500,000. furnishing, delivering structural steel John F. Fitzgerald Expressway Tunnel, Boston, CD 4/29, under LB.

▲† **The Nicholson Co., Inc.,** 10 Rockefeller Plaza, New York, N. Y. LB $1,503,750. est. $1,500,000-$1,750,000. Special AAA facilities, Danvers, Topsfield and Bedford, ENG-19-016-55-140, MASSACHUSETTS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 10. CD 5/18.

▲† **Merritt-Chapman & Scott Corp.,** 260 Madison Ave., New York 16, N. Y. LB $3,035,638. reconstr. marginal pier No. 11 at Charlestown Naval Shipyard, NOY 85264, Spec. 54408, BOSTON, MASS. Dist. P. Wks., IND, 495 Summer St., Boston, Mass. Bids June 14. CD 5/25.

BUILDINGS—LB & CA

▲ **Cabot, Cabot & Forbes, Inc.,** 60 State St., Boston, Mass. Owner Builds. $1,200,000. INDUSTRIAL DEVELOPMENT Rte. 128 and Lynnfield St., PEABODY, MASS.

▲ **A. J. Tambone, Inc.,** 88 Main St., Reading, Mass. Separate Contracts. Est. $1,300,000. RESIDENTIAL DEVELOPMENT, incl. 125 houses, Capehart Colony, TEWKSBURY, MASS.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ **N. J., Flemington**—SCHOOL—BA 6/30—Flemington—Raritan Bd. of Educ., Flemington High School Bonnell St., Flemington, general construction, structural steel work, plumbing, heating and ventilating and electrical work for new elementary school on Bonnell St. $1,100,000. Plans deposit $30 for general construction; $15 for others. The Ballinger Co., 121 N. Broad St., Phila., 7, Pa., archt.

▲ **N. Y., Brooklyn**—HOUSING—BA 7/12—New York City Housing Auth., 299 Broadway, New York, Zone 7, (1) foundations and appurtenances, (2) general constr., (3) foundations and general constr., (4) heating and ventilating, (5) electric work (6) plumbing, furnish, erect elevators, for Linden Houses in area bounded by Stanley Ave. Schenck Ave. ,Cozine Ave. and Vermont Ave., Proj. N. Y. C. 23, Borough of Brooklyn. Plans deposit $75. Extended date. CD 6/9.

HEAVY CONSTRUCTION—LB & CA

▲ **Combustion Engineering Co.,** 200 Madison Ave., New York 16, N. Y. LB $1,892,898. base bid; $2,202,698 maximum escalation, (1 bidder). furnishing, installing, one 450,000 lb. per her. steam boiler for 74 Street Power Plant, Manhattan Boro, Contr. P-142, NEW YORK. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids June 3. CD 5/3.

▲ **Terry Contg., Inc.,** 31 E. 27 St., New York 16, N. Y. CA $5,427,660. Contr. 7, Queens approach and Addnl. connections for Queens Boro Bridge over East River between Manhattan and Queens Boros, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Grand total $7,877,650. CD 5/16, under LB;
Woodcrest Constr. Co., Inc., 369 Lexington Ave., New York 17, N. Y. CA $1,154,990. Contr. 5, Manhattan approach and northerly connection to upper deck roadway, (New York, N. Y.);
Peerless Constr. Co., Inc., 107 Mamaroneck Ave., White Plains, N. Y. CA $1,295,000. Contr. 6, addnl. north upper roadway to bridge structure between anchor piers (New York, N. Y.).

▲ **Peter Kiewit Sons Co.,** 1024 Omaha National Bank Bldg., Omaha, Neb., **Arthur A. Johnson Corp.,** 347 Madison Ave., New York, N. Y. and **Al Johnson Constr. Co.,** Foshay Towers, Minneapolis, Minn. CA $13,957,018. Iroquois Dam near Point Rockaway, St. Lawrence County, New York, Spec. No. PA-5-11011, St. Lawrence Contr. No. 11, NEW YORK. The Power Authority of State of New York, 270 Broadway, New York 7, N. Y. CD 6/3, under LB.

▲ **NEW JERSEY—PENNSYLVANIA**—Delaware River Port Auth., Administration Bldg., Bridge Plaza, Camden, N. J.
New York Shipbuilding Corp., Broadway and Fairview St., Camden 1, N. J. CA $3,758,514. Contr. G-4, stringer spans, superstructure from Newton Creek to North-South Freeway on bridge over Delaware River connecting Packer Ave., Phila., Pa. and Gloucester, N. J. Bids June 9. CD 5/16.

▲ **Verona Constr. Co. Inc.,** 251½ Grove Ave., Verona, N. J., LB $4,496,408, concrete pipe; LB $4,176,308, metal pipe; Contr. 9A, easterly sect. of main trunk sewer, incl. 23,577 lin. ft. 66 and 84 in. sewers, 4,907 lin. ft. connections, all appurtenances, NEW BRUNSWICK, N. J. Middlesex County Sewerage Auth., 103 Bayard St., New Brunswick, N. J. Bids June 10. CD 4/25.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,
Pa.—**Ralph Myers Contg. Corp.,** P. O. Box 125, Pitcairn, Pa. LB $1,912,729. (12 bidders). 34,608 ft. crushed aggregate base with bit. surf. 50 ft. wide T. R. 422, Summit, Clearfield and W. Franklin Twps., Butler and Armstrong Counties;
Pa.—**Latrobe Road Constr. Co.,** P. O. Box 150, Latrobe, Pa. LB $1,178,058. (2 bidders). 23,586 ft. rein.-con. pavement 22 ft. wide, 1 I-beam bridge T. R. U. S. 30, Ligonier Twp., Ligonier Boro, Westmoreland Co.;
Pa.—**J. Paul Laubach,** P. O. Box 68, Benton, Pa. LB $73,265. (5 bidders). wid'n. 4,729 ft. existing road with crushed aggregate base bit. surf. variable in width L. R. 41045 (6), Loyalsock Twp., Lycoming Co. Bids June 10. CD 5/24.

▲ **PENNSYLVANIA**—Commonwealth of Pa., Dpt. Hys., Harrisburg,
Livengood Constr. Corp., Walnutport, Pa. CA $1,869,017. divided hy. on Rte. 22 between Upper Bern and Tilden Twps. between Shartlesville and Hamburg, Berks Co. CD 6/1, under LB.

▲ **PENNSYLVANIA**—Commonwealth of Pa., Dpt. Hys., Harrisburg,
Marsolino Constr. Co., 309 Fayette National Bank Bldg., Uniontown, Pa. CA $1,367,000. two projects. U. S. Rte. 119 in city of Connellsville, Dunbar Twp. 5.53 mi. crushed aggregate base with bit. surf. 24 to 50 ft. wide, divided hy., Rte. 119, North Union and Dunbar Twps. 1.72 mi. crushed aggregate base with bit. surf. 50 ft., Fayette Co. CD 6/1, under LB.

BUILDINGS—LB & CA

▲ **Central Park Shopping Center, Inc.,** c/o BAW Constr. Co., 84 Colorado Ave., Buffalo, N. Y. Owner Builds. Est. $7,000,000. 400,000 sq. ft. SHOPPING CENTER incl. 40 stores, Main and Fillmore Aves., BUFFALO, N. Y. Backus, Crane & Love, 232 Delaware Ave., Buffalo, N. Y., engrs.-archts.

▲ **Austin Co.,** 16112 Euclid Ave., Cleveland, O., CA Est. $2,000,000. 200,000 sq. ft. stamping PLANT addn. (1st section), HAMBURG, N. Y. Ford Motor Co., Metal Stamping Div., 300 Schaefer Rd., Dearborn, Mich. CD 5/11.

▲ **Robin Hood Park Homes,** c/o Long Island Homes, 168-12 Hillside Ave., Jamaica 32, N. Y. Owner Builds. Est. $1,350,000. 85 HOUSES on tract on Newbridge Rd. and Milburn St., HICKSVILLE, N. Y.

▲ **Country Woods at Huntington Homes,** c/o Albert B. Mekienburg, Org., 1038 Northern Blvd., Roslyn, N. Y. Owner Builds. Est. $1,000,000. 43 HOUSES on tract at Park Ave. and Endicott Dr., HUNTINGTON, N. Y.

▲ **Paul Tishman Co.,** 21 E. 70 St., New York 21, N. Y. LB $5,982,744 foreign steel; $5,986,444. domestic steel; (5 bidders). foundation and general constr. for General Grant HOUSES Proj. NY -5-30, Section II incl. Buildings No. 6 to 9 inclusive in area bounded by W. 125 St. and Morningside Ave. W. 123 St. and Amsterdam Ave., Manhattan Boro, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. Bids June 15. CD 6/6;
Harry Starkman & Bros., 348 Brook Ave., New York 54, N. Y. LB $434,875. heating and ventilating work for General Grant Houses. (New York, N. Y.);
Fein-Schlosberg, Inc., 1770 Second Ave., New York 28, N. Y. LB $738,980. plumbing work for General Grant Houses. (New York, N. Y.);
E. A. Kahn & Co., 163-18 Jamaica Ave., Jamaica 32, N. Y. LB $482,000. electrical work for General Grant Houses. (New York, N. Y.).

▲ **Elmwood Park at Syosset,** c/o Trylon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. Est. $1,000,000. 60 HOUSES on tract on Convent Rd., east of Jackson Ave., SYOSSET, N. Y.

▲ **Sokolov Bros. & Sons,** 364 Conklin St., Farmingdale, N. Y. Owner Builds. Est. $9,000,000. HOUSING DEVELOPMENT, shopping center on 150 acre tract on South Country Rd., WEST HAMPTON, N. Y.

▲ **Feist-Drake, Inc.,** 172 W. Utica St., Buffalo, N. Y. Owner Builds. Est. $1,500,000. 110 HOMES Covington Dr., Tudor Blvd., Potters Rd., WEST SENECA, N. Y.

▲ **Gedney Meadows Homes,** Mamaroneck Ave., White Plains, N. Y. Owner Builds. Est. $3,900,000. 150 HOUSES on 38 acre tract on Mamaroneck Ave., WHITE PLAINS, N. Y.
Gailin Homes, c/o Aries-Neidich Associates, 379 S. Broadway, Yonkers, N. Y. Owner Builds. Est. $360,000. 20 HOUSES on tract on Truman and Kings Sts., YONKERS, N. Y.

▲ **Brightland Homes Inc.,** 1020 Oak Ave., Somers Point, N. J., Separate Contracts, $1,224,000. RESIDENTIAL DEVELOPMENT, Tilton Rd., PLEASANTVILLE, N. J.

▲ **Burkey Constr. Co.,** 1800 Hampton Blvd., Reading, Pa. LB $1,020,289. junior high SCHOOL, LAURELDALE, PA. Muhlenberg Twp. School Dist., Laureldale, Pa. Bids June 8. CD 6/3.

▲ **Levitt & Sons, Inc.,** Levittown, Pa. Sepjarate Contracts. Est. $1,950,000. RESIDENTIAL DEVELOPMENT 195 homes in Kenwood Section, LEVITTOWN, PA.

▲ **Peter & Louis Costello,** Stamford and Albion Rds., Phila., Pa. Separate Contracts. Est. $1,000,000. RESIDENTIAL DEVELOPMENT Stamford St., PHILA., PA.

▲ **Westinghouse Electric Corp.,** P. O. Box 868, Pittsburgh, Pa. CA Total Est. $17,000,000. 90,000 kilowatt GENERATING UNIT for power plant, WEST PITTSBURGH, PA. Pennsylvania Power Co., 19 E. Washington St., New Castle, Pa.;
Babcock & Wilcox Co., 161 E. 42 St., New York 17, N. Y. CA boiler (West Pittsburgh, Pa.).

▲ **Strafford Development Co.,** 405 Arch St., Phila., Pa. Separate Contracts. Est. $1,550,000. RESIDENTIAL DEVELOPMENT Washington Lane, RYDAL, PA.

▲ **Roscoe Eng. Co.** 1107 19th St. N.W., Wash. D. C., CA est. $1,500,000, general alterations and partial new facing for masonry OFFICE, 1825 "H" St., N.W. WASH. D. C. Hilda K. Wine, 1107 19th St., N.W. Wash. D. C. Edwin Weihe, 1621 "K" St., N.W. Wash. D. C., archt.

▲ **Hegeman-Harris Co., Inc.,** 30 Rockefeller Plaza, New York 20, N. Y. CA est. $14,000,000. First Sect. APARTMENT and office bldgs. on 10-acre tract bounded by 24 St., G and H Sts., New Hampshire and Virginia Aves., and Rock Creek and Potomac Parkways, WASH. D. C. Potomac Plaza Center, c/o contractor.

▲ **Barkeley Homes, Inc.,** Charles and Passmore Sts., Phila., Pa. CA $2,000,000. RESIDENTIAL DEVELOPMENT New Castle Ave., WILMINGTON, DEL. Boardman-Smith Corp., 1321 Airdrie St., Phila., Pa.

▲ **Ernest DiSabatino,** 260 W. Fourth St., Wilmington, Del.. CA $1,026,000. est. $1,369,000. Millside Elementary SCHOOL, Playgrounds and drives, WILMINGTON, DEL. Millside School Bldg. Comn., Millside, Wilmington, Del. CD 5/26, under LB.

SOUTH

BUILDINGS—SLC

▲ **Ga., Macon**—PLANT ADDN.—Armstrong Cork Co., Liberty & Charlotte Sts., Lancaster, Pa., soon lets contract, mfg. plant addn. $1,250,000. Charles Conrad, Jr., West Liberty & Mary Sts., Lancaster, Pa., archt. Rust Eng. Co., 576 6 Ave., Pittsburgh, Pa., engr. CD 4/15.

HEAVY CONSTRUCTION—LB & CA

SOUTH CAROLINA—State Hy. Dpt., Hotel Jefferson, Columbia,
Cherokee, Inc., Box 1296, Columbia, S. C., CA $870,198, grading 13.561 mi. U. S. Rte. 17, S. C. Dockets Nos. 7.305 and 27.271. F.A. Projs. Nos. F 288 (5), Part 4, IN-79 (4) and F-79 (5), Parts 1, 2 and 3, Beaufort and Jasper Counties. Bids Mar. 15. CD 3/22 under LB.

† **Atlantic, Gulf & Pacific Co.,** 15 Park Row, New York, N. Y., LB $782,966, dredging in Charleston Harbor. Charleston Co., SOUTH CAROLINA. U. S. Eng., Customhouse, Charleston, S. C. Bids June 1. CD 5/6.

† **Dickerson, Inc.,** Monroe, N. C., CA $503,679. alert hangar, ready crew bldg. and ready rocket storage bldg., Seymour Johnson Air Force Base, ENG-31-075-55-53. GOLDSBORO, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids May 19. CD 6/3.

BUILDINGS—LB & CA

G. L. Wilson Building Co., Statesville, N. C., LB $752,000. HOSPITAL, MOUNT AIRY, N. C. Bd. Trustees Northern Hospital of Surry Co., Mount Airy, N. C. George Watts Carr, Durham, N. C., archt. Bids June 7. CD 5/7/53.

General Constr. Co., 1815 Blanding St., Columbia, S. C. LB $749,800. four COLLEGE BLDGS., ORANGEBURG, S. C. State Colored Normal, Industrial, Agricultural & Mechanical College of South Carolina, Orangeburg, S. C. Bids June 8. CD 5/5.

▲ **Daniel Constr. Co.,** 429 N. Main St., Greenville, S. C., CA Est. $2,000,000. 220,000 sq. ft. textile PLANT, DUBLIN, GA. J. P. Stevens & Co., Dublin, Ga. CD 6/1.

▲ **Brown & Root, Inc.,** Box 3, Houston, Tex. CA $1,500,000. paper PLANT expansion, LOCKPORT, LA. Valentine Pulp & Paper Co., Lockport, La.

† **Ernest B. Jr. and Robert Norman,** 5001 Gen. Meyer Ave., Algiers, New Orleans 14, La. LB $929,912. 90 unit navy housing Proj. NEW ORLEANS LA. Dist. P. Wks. Officer, Eighth Naval Dist., Bldg. 16, U. S. Naval Station, Algiers, New Orleans, La. Bids June 3. CD 5/20.

Southern Builders, 495 W. 61 St., Shreveport, La. CA $668,000. negro elementary SCHOOL, SHREVEPORT, LA Caddo Parish School Bd., 501 Courthouse Bldg., Shreveport, La. CD 6/7, under LB.

Martindale Bros., Murfreesboro, Tenn. LB $489,800. Campbellsville Elementary SCHOOL gymnasium addn., Mannsville Elementary SCHOOL and gymnasium Mannsville, CAMPBELLSVILLE, KY. Taylor Co., Bd. Educ., Campbellsville, Ky. Bids June 7. CD 11/8/54.

(Continued on page 72)

HOW COME HYATTS ARE BETTER BEARINGS?

I'll tell you, says HY WHEELER, the sage of the socket wrench:

The *big* thing is, Hyatt's got more *know-how* than anybody else in the roller bearing business. Hyatts have been standard equipment on most cars, trucks and tractors since the early days, and brother, don't think all that experience don't make a difference!

F'rinstance, Hyatt's got a way of grinding the inside diameters of races that guarantees absolutely uniform wall thickness—developed it themselves. They use the finished race O.D. to produce perfectly concentric I.D. It's these "little" things you can't see with the naked eye that make a big difference in performance—and make me keep sayin':

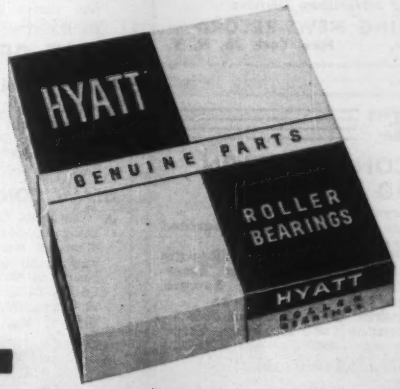
There's other bearings that *look* as good, but you *hold out for Hyatts in the blue and yellow box.* When it comes to *quality,*

DISTRIBUTED BY DEALERS EVERYWHERE

A GENERAL MOTORS PRODUCT

A UNITED MOTORS LINE

there's no substitute for . . .

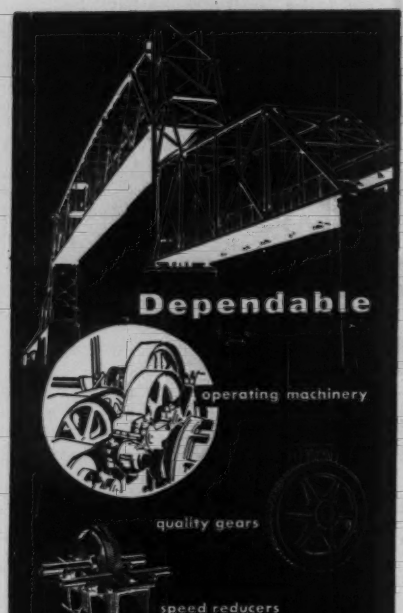


HYATT

ROLLER BEARINGS

STRAIGHT BARREL TAPER

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY



from
●
●
OFFICE MANAGER
●
to
●
GENERAL MANAGER
●
●

yes, that is the quality of the personnel available to your organization through the Classified Advertising pages of ENGINEERING NEWS-RECORD.

Classified Advertising Division
ENGINEERING NEWS-RECORD
330 W. 42nd St. New York 36, N. Y.

"GUNITE"

NEW CONSTRUCTION AND REPAIRS

- Prestressed Tanks
- Repair all Types Disintegrated Concrete
- Dam Reconstruction and Repairs
- Linings and Repairs to Reservoirs, Stacks, Bunkers, Sewers, Tanks, Tunnels, Pen Stocks
- Structural Steel Encasements
- Restoration of Masonry Structures

Experienced Personnel

Write for our new 48 page Bulletin

PRESSURE CONCRETE CO.

Gunite Contractors and Engineers

33 No. LaSalle St. Chicago 2, Ill. **315 So. Court St. Florence, Ala.**
193 Emmett Street, Newark 5, N. J.

(Continued from page 70)

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲† **Wisconsin**—BA 7/12—U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill., misc. bldgs., structures and related work to incl. (A) Operational: (1) three 3,900 sq. ft. rein.-con. underground storage structure (2) 1 story 800 sq. ft. frame generator bldg.; (3) 1 story 1,400 sq. ft. masonry general purpose bldg.; (4) 1 story 700 sq. ft. general purpose bldg.; (4) 1-story 700 sq. ft. masonry ready bldg.; (5) three structural steel radar towers, each approx. 20 ft. high (6) misc. small bldgs. and structures incl. electrical substation, acid fueling station, storage shed, septic tank with sand filter bed tile distr. field, etc.; (B) Housing: (1) 4,050 sq. ft. administration, recreation and storage bldg.; (2) approx. 11,400 sq. ft. E.M. barracks and B.Q.; (3) 2,875 sq. ft. mess hall; (C) sewage disposal sys. of concrete Imhoff tank, sand filters and appurtenances; (D) two water sys., incl. pump houses, etc.; (E) exterior utilities and general site imprvs. incl. ditching, drainage, chain link, fencing, etc. at Brown Deer. Serial No. ENG-11-032-55-62. Plans deposit $100.

HEAVY CONSTRUCTION—LB & CA

▲ **Reed Constr. Co.**, Mishawaka, Ind., CA Est. **$1,000,000.** First Sect., street constr., SOUTH BEND, IND. City, South Bend, Ind.

▲ **G. Jellefalde & Assocs.**, Forest City, Iowa, LB **$1,079,403.** sewage treatment plant, sewers exten., pumping station, two lift stations, MATTOON, ILL. City, City Hall, Mattoon, Ill. CD 12/8/54.

HEAVY CONSTRUCTION—LB & CA

▲ **Frank Messer & Sons, Inc.**, 4612 Paddock St., Cincinnati, O. LB **$1,616,000** (5 bidders) Seton High SCHOOL addn., CINCINNATI, O. Sisters of Charity, Delhi Park, Cincinnati, O. Bids June 14. CD 5/25.

▲ **Gallenstein Constr. Co.**, Morrison Place, Madeira, O., Owner Builds. Est. **$5,000,000.** 350 HOME development on U. S. Rte. 50 and Cemetery Rd., Clermont Co., MILFORD, O. Carl Rehring, 3798 Broadlawn Ave., Cincinnati, O., engr.

▲ **Robert Lehman**, 600 Cleveland St., Fremont, O. Owner Builds. Est. **$1,250,000.** Eastmoreland SHOPPING CENTER, Starr Ave. and Wheeling St., TOLEDO, O.

▲ **Sumner Sollitt Co.**, 307 N. Michigan St., Chicago 1, Ill., LB **$3,327,000,** est. $3,000,000 (6 bidders) Henry Horner HOMES II, five 7-story bldgs., 325 units, Lake St. and Damen Ave., CHICAGO, ILL. Chicago Housing Auth., 608 S. Dearborn St., Chicago 5, Ill. Bids June 7. CD 5/18.

▲ **Paschen Contrs. Inc.**, 2739 Elston St., Chicago, Ill., CA **$1,000,000.** RESEARCH bldg. in physics and electrical engineering for Armour Research Foundation, CHICAGO, ILL. Illinois Institute of Technology, 3349 S. Dearborn St., Chicago, Ill. CD 5/27.

▲ **Rommy Hammes Homes, Inc.**, 1905 E. Court St., Kankakee, Ill. Own Forces. **$1,000,000.** SHOPPING

Palisades Constr. Co., 2110 Palisades Dr., Appleton, Wis., LB **$361,000** (3 bidders) general constr. Senior HIGH SCHOOL, CLINTONVILLE, WIS. Clintonville Joint School Dist. No. 1, Clintonville, Wis. Bids June 2. CD 5/18.

Paulson Constr. Co., Inc., Medford, Wis., CA Est. **$350,000,** 35,000 sq. ft. concrete, brick, steel woodworking PLANT, sawmill and dry kilns, HAYWARD, WIS. Acme Steel Corp., 2840 S. Archer St., Chicago, Ill. CD 5/4.

T. S. Willis, 208 Milwaukee Ave., Janesville, Wis. CA Est. **$795,000.** general contract 4 story 64x98 ft. and 40x40 ft. HOSPITAL ADDN., JANESVILLE, WIS. Mercy Hospital, 566 N. Washington St., Janesville, Wis. CD 12/7/54.

Perfect Seal Acoustical Co., Walworth, Wis. Day Labor. **$350,000.** 1 story, 157x300 ft. FACTORY-OFFICE, WALWORTH, WIS. Jenson & Johnson, Elkhorn, Wis., engrs.

▲ **Lowe & Old Constr. Co.**, 149 W. Broadway, Waukesha, Wis. Owner Builds. Est. **$1,270,000,** 85 HOUSES, WAUKESHA, WIS. CD 12/3/54.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲† **Tex., Beeville**—AIRFIELD PAVEMENT—BA 7/13—Bureau Yards & Docks, Dpt. Navy, Admin. Bldg. Naval Air Station, Corpus Christi, addnl. airfield pavement for Chase Field Auxiliary Air Station, NOY 84272. $450,000-$1,000,000. Plans deposit $50.

HEAVY CONSTRUCTION—LB & CA

▲ **Woermann Constr. Co.**, 3800 W. Pine Blvd., St. Louis 8, Mo. CA Est. **$1,500,000.** 15 m.g. WW plant on Meramec River with intake pumps on east bank south of Gravois Rd. and filter plant settling basins on 90 acre tract about 1 mi. from river, ST. LOUIS COUNTY, MO. St. Louis County Water Co., W. Victor Weir, pres., 6600 Delmar Blvd., University City 5, Mo. R. W. Booker & Assoc., 1722 Olive St., St. Louis 3, Mo., engrs.-archts. CD 2/25/55.

▲† **U. S. Eng.**, P. O. Box 867, Little Rock, Ark., cancelled bids to have been opened June 7, aircraft fueling facilities, Blytheville Air Force Base, Eng 03-050-55-122, BLYTHEVILLE, ARK. Est. **$500,000-$1,000,000.** CD 5/19.

▲ **Interstate Constr. Co.**, 3621 Troost St., Kansas City, Mo. CA **$1,765,000.** water treatment plant in northeast part of Johnson Co., KANSAS CITY, KAN. Suburban Water Co., 5916 Dearborn St., Kansas City, Kan. CD 6/16, under LB.

▲† **H. B. Zachry Constr. Div.**, Box 2570, San Antonio, Tex., CA **$1,199,679,** grading, paving, drainage, etc., Abilene Air Force Base, ENG-41-443-55-136. ABILENE, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids May 27. CD 6/2 under LB.

▲ **Elmer C. Gardner, Inc.**, 10150 Old Katy Rd., Houston, Tex. CA **$1,644,542,** Dock Nos. 10, 11, 12 and 13, incl. railway trackage and water sys. BROWNSVILLE, TEX. Brownsville Navigation Dist., Navigation District Bldg., Brownsville, Tex. Bids May 25. CD 6/16 under LB.

▲ **T. C. Bateson Constr. Co.**, 6800 Denton Dr., Dallas, LB **$4,139,500** est. $5,000,000. 4-story airport terminal for Love Field, DALLAS, TEX. City, City Hall, Main and Harwood Sts., Dallas, Tex. Bids June 10. CD 5/4.

▲ **Farnsworth & Chambers Co., Inc.**, Box 74, Houston, Tex. LB **$3,153,000.** 1st phase of bridge connecting Galveston Island with Pelican Island, GALVESTON, TEX. City, City Hall, Galveston, Tex. Bids June 13. CD 5/18.

▲ **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex. LB **$2,257,063,** est. over $1,000,000. 20 m. gal. water treatment plant, WYLIE, TEX. North Texas Municipal Water Dist., Wylie, Tex. Bids June 7. CD 5/4.

▲ **Associated Pipe Line Contractor, Inc.**, 3272 Westheimer St., Houston, Tex. CA Total est. **$5,000,000.** Sect. 1, 115 mi. 16-in. pipe from Gurnsey, Wyo. to Newcastle, Wyo.; CA Sect. 2, 89 mi. 16-in. pipeline from Newcastle, Wyo. to U. S. Hy. 212, MONTANA AND WYOMING. Shell Pipe Line Corp. agent for Butte Pipe Line Co., Glendive, Mont.;

O. R. Burden Constr. Co., 6702 E. 21 St., Tulsa, Okla. CA Sect. 3, 88 mi. 16-in. pipe line and 15 mi. 12-in. pipe line from U. S. Hy. 212 to Cabin Creek oil field near Baker, Mont. (Montana);

Anderson Brothers, Prudential Bldg., Houston, Tex. CA Sect. 4, 82 mi. 10-in. pipe line and 6½ mi. 12-in. pipe line from Colgate, Mont. to Poplar, Mont. (Montana).

▲ **Bacharach Constr. Co.**, Rialto Bldg., Kansas City, Mo. LB **$583,000.** filter plant equip., DENVER, COLO. Bd. Water Comrs., City & County Bldg., Denver, Colo. Bids June 8. CD 5/20;

Mountain States Constr. Co., 424 Denham Bldg., Denver, Colo., LB **$621,832,** 103x225 ft. existing bldg. addn., (Denver, Colo.).

BUILDINGS—LB & CA

▲ **Sheehy Constr. Co.**, 1550 Larpenteur Ave. W., St. Paul, Minn. CA **$1,431,000.** est. $2,000,000. (6 bidders) general contract, junior high SCHOOL, HIBBING, MINN. Bd. Educ., R. G. Hoskins, clk., Hibbing, Minn. Bids June 9. CD 5/23.

▲† **A. J. Alport Co.**, Title Guarantee Bldg., St. Louis, Mo. LB **$3,722,900.** (5 bidders). alterations, addns. to bldgs. and utilities at Veterans HOSPITAL, JEFFERSON BARRACKS, MO. Veterans Adm., Munitions Bldg., Wash., D. C. Bids June 14. CD 4/13.

▲ **John B. Gutmann Constr. Co.**, 1301 S. Vandeventer Ave., St. Louis 10, Mo. CA **$1,615,000.** general contract, PROVINCIALATE (Mother House) consisting of 2 story, bsmnt. 45x274 ft. W-shaped main bldg. front section; 35x48x207 ft. juniorate wing; 48x218 ft. novitiate wing; circular center chapel; 59x175 ft. rear school section; 1 story, bsmnt., boiler room, garage, servants' quarters; connecting passages and bridged sections, etc., on Geyer Rd. between Clayton and Manchester Rds., FRONTENAC (ST. LOUIS 24 P.O.), MO. Sisters of Mercy, c/o Mother M. Bernardo Mulligan, mother provincial St. Joseph's Convent, 723 S. Laclede Station Rd., Webster Groves 19, Mo. Bids June 6. CD 5/16.

John C. Murphy Plumbing & Heating Co., 4376 Olive St., St. Louis 8, Mo. CA **$475,532.** plumbing and heating work. (St. Louis, Mo.).

▲† **Peter Kiewit Sons Co.**, Omaha, National Bank Bldg., Omaha, Neb. CA **$17,942,200.** Item 1 and Alternate 1A, HOSPITAL, TOPEKA, KAN. Veterans Administration, Munitions Bldg., Wash., D. C. Bids June 7, awarded June 15. CD 6/9, under LB.

▲ **West Hills Corp.**, 3615 Stratford Rd., Topeka, Kan. Owner Builds. Est. **$4,000,000.** 200 HOMES, TOPEKA, KAN.

▲ **Texas Housing Co.**, 9001 Denton Dr., Dallas, Tex. CA **$1,400,000.** 178 DWELLINGS PROJ., OKLAHOMA CITY, OKLA. Charles Stanford, c/o 9001 Denton Dr., Dallas, Tex. Charles E. Armstrong, 6351 Camp Bowie St., Fort Worth, Tex., archt. CD 8/19/52.

▲ **Harmon Constr. Co.**, 28 S. Indiana St., Oklahoma City 4, Okla., LB **$2,687,687,** est. $2,500,000 (6 bidders) 202-bed wing HOSPITAL addn., TULSA, OKLA. St. John's Hospital, 21 and Utica Sts., Tulsa, Okla. Leon B. Senter, 306 Philtower Bldg., Tulsa, Okla., archt. CD 10/14/53.

▲ **J. H. McCullick Constr. Co.**, 1403-C Guadalupe St., Austin, Tex., LB **$1,876,719,** Groups A through H, primary CLASSROOM BLDG., secondary 25-room classroom bldg.; 25 cottages to house 18 to 28-persons each; steel frame, masonry auditorium; laundry plant; vocational bldg.; infirmary; library and admin. plant, State School for Deaf, AUSTIN, TEX. State Bd. of Control for State School for Deaf, Capitol Station, Austin, Tex. Bids June 9. CD 5/11.

▲ **Farnsworth & Chambers Co., Inc.**, Box 74, Houston, Tex., CA **$1,680,000.** 140,000 sq. ft. structural steel frame, glass and stone CLUBHOUSE (Sharpstown Country Club No. 1) BELLAIRE-HOUSTON, TEX. Frank W. Sharp, 6302 Bellaire Blvd., Houston, Tex. MacKie & Kamrath, 2713 Ferndale St., Houston, Tex., archts. Walter P. Moore, 2 Pinedale St. and R. L. Jenkins, 2622 Richmond St., Houston, Tex., engrs. CD 8/13/54, under Houston, Tex.

(Continued on page 74)

he knows how to take the Debbil out of the Sun!

Old Sol—Devil or Saint can be . . . but to the farmer or rancher who has proper irrigation, the Sun is all Saint.

Layne knows a great deal about irrigation in all its phases because Layne knows a great deal about water, including development of ground water resources . . . utilization of existing water sources . . . application as well as proper equipment designed to meet specific conditions. Layne service to industry, agriculture and municipality has made Layne the world's largest developer of ground water resources—and that fund of knowledge is yours without cost or obligation when you "ask the man from Layne."

LAYNE & BOWLER, INC.

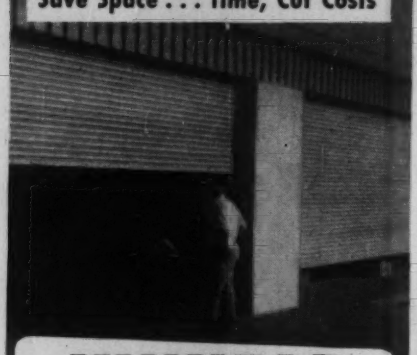
Memphis 8, Tennessee

Layne Associate Companies Throughout the World

water wells • vertical turbine pumps • water treatment

Layne

Save Space . . . Time, Cut Costs



KINNEAR
Rolling Doors

The time-saving, space-saving *coiling upward action* of Kinnear's all-steel interlocking-slat curtain is "tailored" to each opening. No floor or wall space is wasted. You get all-steel protection against fire, wind, or intruders — plus heavy galvanizing for highest resistance to the elements. Motor or manual control. Write for full details.

The KINNEAR Manufacturing Co.
1820-40 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.

KINNEAR ROLLING DOORS
Saving Ways in Doorways

DRILLING CONTRACTORS
Diamond and Shot Core Borings
Dry Sample Borings
Grout Holes and Pressure Grouting
Foundation Testing for Bridges, Dams and other Heavy Structures

Manufacturers, also of Diamond Core Drilling Machines and complete accessory equipment, including all types of Diamond Drilling Bits. Ask for Bulletin 320.

SPRAGUE & HENWOOD, Inc.
Dept. E, Scranton 2, Penna.

GUNITE
Since 1915
CONCRETE
SAND AND CEMENT
"Placed by Air"

We have a well-trained and experienced field organization. We own and operate 43 complete cement gun outfits.

Send for specifications and bulletins
See our catalog in Sweet's

GUNITE CONCRETE & CONST. CO.
1301 WOODSWETHER RD., KANSAS CITY 5, MO.
2016 W. WALNUT, CHICAGO 12, ILL.
3206 HOUSTON, HOUSTON 9, TEX.
St. Louis - Milwaukee & Twin Cities - Denver
New Orleans - Memphis

(Continued from page 72)

▲ **Farnsworth & Chambers Co., Inc.**, Box 74, Houston, Tex., CA **$1,500,000.** main SHOPPING CENTER unit in "Sharpstown," HOUSTON, TEX. Frank W. Sharp, 2202 Rosslyn St., Houston, Tex. MacKie & Kamrath, 2713 Ferndale St., Houston, Tex., archts. CD 8/13/54.

▲ **Frank W. Sharp Constr. Co.**, 2202 Rosslyn St., Houston, Tex., CA **$1,013,350**, No. 4, 33 DWELLINGS; No. 5, 30 DWELLINGS; No. 7, 44 DWELLINGS in "Sharpstown," HOUSTON, TEX. Frank W. Sharp, c/o 2202 Rosslyn St., Houston, Tex. CD 8/12.

▲† **King Constr. Co.**, Texarkana Bank Bldg., Texarkana, Tex., LB **$1,163,796**, est. $1,196,599, ammunition MAINTENANCE FACILITIES, Red River Arsenal, ENG-34-066-55-102, TEXARKANA, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids May 25. CD 6/2, under LB.

▲ **J. W. Bateson Co. Inc.**, Gibraltar Life Bldg., Dallas, Tex., CA Total est. **$12,500,000.** mfg. PLANT and office, TYLER, TEX. General Electric Co., 570 Lexington Ave., New York, N. Y. Bids June 2. CD 5/25.

▲ **Kitchell-Phillips Co.**, 1796 W. Buchanan St., Phoenix, Ariz. and **Utah Constr. Co.**, 144 E. Broadway, Salt Lake City, Utah. CA Est. **$1,000,000.** 2 story, bsmnt., telephone EXCHANGE, ALBUQUERQUE, N. M. Mountain State Telephone & Telegraph Co., 120 Fourth St. S.W., Albuquerque, N. M. Edward Varney & Assoc., Luhrs Bldg., Phoenix, Ariz. and Gordon L. Ferguson Co., 111 Amherst Dr. S. E., Albuquerque, N. M., archts.

FAR WEST

BUILDINGS—BA

▲ **Utah, Salt Lake City**—OFFICE—BA 7/1—Zion's Security Corp., L. Pierce Brady, Mgr., Union Pacific Annex Bldg., 8-story office, 57 W. South Temple St. $1,000,000. Ashton, Evans & Brazier, 24 S. West Temple St., archts. CD 11/15/54.

▲ **Calif., Hayward**—SCHOOL—BA 7/13—Hayward Union Elementary School Dist., 22300 Foothill Blvd., school; Castro Valley. $2,000,000. Plans deposit $100. Anderson & Simonds, 2800 Park Blvd., Oakland, archts. T. F. Chace, 268 Market St., San Francisco, engr. CD 3/18/54.

HEAVY CONSTRUCTION—LB & CA

▲† **Utah Constr. Co.**, Box 1590, Salt Lake City, Utah, LB **$1,372,172**, Pineview Dam enlargment and Highway relocation, Weber Basin Proj. near Ogden, DC 4424. UTAH Bureau Reclamation, Dpt. Interior, Ogden, Utah. Bids June 14. CD 5/13.

▲† **Heller Constr. Co., Campbell Constr. Co., Erickson Constr. Co. and Lawrence Constr. Co.**, 4671 Twenty Fourth Street Rd., Sacramento, Calif., LB **$6,394,853**, est. $9,000,000. AMC Warehouses and facilities, McClellan Air Force Base, SACRAMENTO, CALIF. U. .S Eng., 1209 8th St., Sacramento, Calif. Bids June 14. CD 5/13.

† **Hoffman Constr. Co.**, 715 S. W. Columbia St., Portland, Ore., LB **$665,800**, est. $643,625. (7 bidders), pumping plant addns., RICHLAND, WASH. Atomic Energy Comn., Hanford Operations Office, Richland, Wash. CD 6/30/52, under Public Buildings.

Northwest Constr. Co., 3950 6 Ave. N.W., Seattle, Wash., CA **$667,126** est. $519,450, c. conc. paving W. Genesee and other streets, SEATTLE, WASH. City, County-City Bldg., Seattle 4, Wash. Bids May 25, awarded June 8. CD 6/2 under LB.

BUILDINGS—LB & CA

▲ **A. C. King, Inc.**, Box 1902, Fresno, Calif. Owner Builds. $1,341,000. 180 HOMES near FRESNO, CALIF.

Geo. M. Pardee Sr. Constr. Co., 10639 Santa Monica Blvd., Los Angeles, Calif., Owner Builds, **$460,000.** 50 frame, stucco DWELLINGS, FULLERTON, CALIF. Jones & Emmons, 8925 Beverly Blvd., Los Angeles, archts.

▲ **B & E Building Co.**, 470 S. Beverly Dr., Beverly Hills, Calif., CA **$1,164,304.** 106 stucco DWELLINGS, El Segundo Blvd. and Van Ness Ave , GARDENA, CALIF. Grand View Holly Park, 470 S. Beverly Dr., Beverly Hills, Calif.

▲ **City**, 205 W. Broadway, Long Beach, Calif. cancelled bids to have been opened June 3 indefinitely, RECREATION and exhibit hall, est. **$3,500,000.** LONG BEACH, CALIF. CD 5/25.

Smith-Campbell Constr. Co., 6510 Cherry Ave., Long Beach, Calif., LB **$960,000.** est. $950,000. AUDITORIUM at Long Beach City College, LONG BEACH, CALIF. Long Beach Bd. Educ., 715 Locust Ave., Long Beach, Calif., Bids June 10. CD 5/25.

Stanton-Reed Co., 720 S. Palm Ave., Alhambra, Calif., CA, **$750,000.** concrete HOSPITAL, 2746 Pacific Ave. LONG BEACH, CALIF. Long Beach Osteopathic Assoc., 2776 Pacific Ave., Long Beach, Calif. CD 12/9/54.

Ben K. Tanner & Son, 387 S. Robertson St. Beverly Hills, Calif., CA, **$699,796**, est. $728,950. El Monte ADMINISTRATION CENTER, El Monte, LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids May 18, awarded June 6. CD 4/26.

▲ **Cahill Constr. Co.**, 350 Sansome St., San Francisco, Calif., CA **$1,682,000.** Design and construct GARAGE bldg. near Mason and O'Farrell St., SAN FRANCISCO, CALIF. Downtown Center Corp., 535 Powell St., San Francisco, Calif. CD 2/24/53 under Public Buildings.

Eichler Homes, 2001 El Camino Real, Palo Alto, Calif., Owner Builds, **$406,000.** 29 HOME Subdivisions, TERRA LINDA, CALIF.

▲ **E. H. Moore & Son**, 693 Mission St., San Francisco, Calif., LB **$2,763,500.** (3 bidders) Tulare County COURT HOUSE, VISALIA, CALIF., Tulare Co., Court House, Visalia, Calif. Bids June 14. CD 6/2.

McDonald Bros., 6060 W. Adams Blvd., Los Angeles, Calif., CA **$1,254,000.** 110 frame, stucco DWELLINGS, WEST COVINA, CALIF. Mohmac Constr. Co. Inc., 6060 W. Adams Blvd., Los Angeles, Calif.

CANADA

BUILDINGS—BA

▲ **B. C., Richmond**—PLANT—BA 6/30—Crown-Zellerbach Ltd., 640 W. Hastings St., Vancouver, paper converting and box mfg. plant, $4,000,000. H. A. Simons Ltd., 16 E. Hastings St., Vancouver, B. C., engrs.

BUILDINGS—SLC

▲ **Alta., Calgary**—PARKING GARAGE—Hudson's Bay Co., Calgary, soon lets contract, "Parkade" 5-story rein.-con. structure with 10 parking levels. $1,500,000. Stevenon & Dewar, 340 7th Ave. W., archts. CD 2/28.

HEAVY CONSTRUCTION—LB & CA

ALBERTA—Alberta Govt., Parliament Bldgs., Edmonton, Alta.—**Poole Eng. Co. Ltd.**, 10503 109th St., Edmonton, Alta., CA **$409,314.** 12 mi. stabil. gravel base course Hy. 2 from Wembley to Beaverlodge;

Alta.—**W. C. Wells Constr. Co. Ltd.**, 10519 115th St., Edmonton, Alta., CA **$461,733** apply stabil. gravel base course Hy. 2 from north of Nampa to Peace River and asphaltic hot plant mix surf. Hy. 2 from south of Whitelaw to Fairview. Awarded June 3. CD 12/1/43.

BRITISH COLUMBIA—B. C. Govt., Douglas Bldg., Victoria, B. C.

Campbell-Bennett Ltd., 1718 W. 5 Ave., Vancouver, B. C., CA **$568,447.** Proj. 516, reconstr. 3.81 mi. Trans-Canada Hy. Arbuts Creek to Malahat Chalet. Bids May 3, awarded June 3. CD 5/16, under LB.

▲ **Miron & Freres Ltd.**, 2201 Ct. St. Michel, Montreal, Que., CA, **$1,768,900.** excavation and dyke constr., Iachine Section from the Jacques Cartier Bridge to entrance of Montreal Harbor, ONTARIO—QUEBEC. St. Lawrence Seaway Auth., No. 2 Temporary Bldg., Ottawa, Ont. Bids May 25. CD 5/10.

BUILDINGS—LB & CA

▲ **G. H. Wheaton Ltd.**, 1217 Wharf St., Victoria, B. C., CA, **$1,115,284**, est. $2,000,000. (6 bidders) bulk STORAGE bldg., Naval Station, ESQUIMALT, B. C. Defence Constr Ltd., 56 Lyon St., Ottawa, Ont. CD 3/16.

Barnabe & Fils Ltd., 1205 Second Ave., Quebec City, Que., CA, **$600,000**, 6 story HOTEL ADDN., QUEBEC CITY, QUE. Hotel St. Louis, 33 St. Louis St., Quebec City, Que. Louis Carrier, 144 St. Jean St., archt. Awarded June 9.

Ernest Cote, 730 Oblate St., Quebec City, Que., CA, **$500,000.** SCHOOL, QUEBEC WEST, QUE. Commission Scolaire de Quebec West, Quebec West, Que. Aurele Bigonesse, 3 Parloir St., Quebec City, archt. Awarded June 9. CD 8/26/54.

▲ **Smith Bros. & Wilson, Ltd.**, 524 Second Ave. N., Saskatoon, Sask., LB **$1,199,000** (7 bidders) science service LABORATORY, SASKATOON, SASK. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids June 8. CD 5/11.

ALASKA

HEAVY CONSTRUCTION—LB & CA

▲† **ALASKA**—Alaska Road Comn., Dpt. Interior, Federal Bldg., Juneau,

Rogers Constr. Co. and Babler Bros., Anchorage, Alaska, LB **$1,013,709** est. $1,244,575 (5 bidders) regrading, bit. surf. 25 mi. Sterling Hy. Bids June 14. CD 5/26. ,

▲† **ALASKA**—Alaska Road Comn., Dpt. Interior, Juneau,

Green Constr. Co., 321 Locust St., Des Moines, Iowa. CA **$1,189,146.** est. $1,276,026, surf. and paving Sect. E-1 of Richardson Hy., Big Timber to Paxson, 57.428 mi. Bids May 17. CD 5/23 under LB.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲† **Bermuda**—GLOBECOM FACILITIES—BA On Or About 7/13—U. S. Eng., 346 Broadway, New York 13, N. Y., Globecom Facilities, Kindley Air Force Base, (a) 1 story 86x132 ft. concrete block communications relay center bldg.; (b) 1 story 22x43 ft. concrete block power bldg. to be attached to communications relay center bldg.; (c) constr. and installation of all outside utilities and site work for structures, incl. site grading, bit. paved access roads and parking areas concrete walks, water supply, sewer lines and electrical service lines, ENG-30-347-55-6. Plans deposit $15. CD 5/31.

HEAVY CONSTRUCTION—LB & CA

▲† **Pittsburgh-Des Moines Co.**, Neville Island, Pittsburgh, Pa., U. S. A. and **Intrecanales Co.**, Madrid, Spain, CA **$6,277,716**, terminal storage facilities, various locations, in connection with Spanish Air Force Bases for Bureau Yards & Docks, Wash., D. C., SPAIN. Brown-Raymond-Walsh, 122 E. 42nd St., New York, N. Y., Prime contractors. CD 5/27, under LB.

UNIT PRICES

Yakima, Wash., Canal Bid Is Low on Excavation

Ten contractors competed to build 17 mi of canal and wasteway on the Bureau of Reclamation's Yakima project. The award went to Murphy Bros., Inc., low at $319,718 and 5.7% under the engineer's estimate. Two bids went under the estimate; eight ranged from 4% to 25% above.

Murphy's excavation prices totaled $12,825 less than second low, and his concrete was $10,588 less, more than the $11,384 total difference between first and second bids.

Construction engineer for the project is W. L. Karrer. Design is under L. N. McClellan, Chief Engineer and Asst. Commissioner. Location is 5 mi southwest of Kennewick, Wash.

The work covers a 16-mi reach of Main canal of 4- to 7-ft bottom widths, one mi of Hover wasteway channel; and drainage inlets and culverts, checks, siphons, bridges, wasteway chute, and wasteway culvert. The canal will have unlined, earthlined, and gravel-blanketed sections.

Prevailing minimum wage rates include: general laborers $2.15 per hr, pipe layers $2.45; equipment operators, canal trimming machine $2.95, concrete mixers $2.45, earth boring machine $2.65; power shovel, drag line, crane $2.95, 5 cy and over $3.35; truck drivers, side and end dump 6 to 12 yd $2.40, 12 to 20 $2.55, over 20 $2.70.

1C Murphy Brothers, Inc., Spokane, Wash..... $319,718
2 Henry C. Werner & Tauf Charneski, Eugene, Ore..... 331,102
10 Erland & Blickle, Portland, Ore..... 423,874
EE U. S. Bureau of Reclamation, Denver, Colo. 338,982

Completion time: 530 calendar days; liq damages $100 / day

Bids: 4-28-55 Items	Unit	Quantity	Unit Prices 1C	2
Excavation, canal comm, 1st 200,000 cy.	cy	200,000	$0.22	$0.28
over 200,000 cy....	cy	196,000	0.18	0.17
rock, first 5,000 cy...	cy	5,000	0.80	1.20
over 5,000 cy.....	cy	5,000	0.60	0.75
Exc, drainage channel & ditches, common.....	cy	2,300	0.30	0.25
rock.....	cy	200	1.00	2.50
Exc, structs, common	cy	12,700	0.70	0.45
rock.....	cy	1,500	1.50	3.25
Compact embankments first 28,000 cy.....	cy	28,000	0.25	0.23
over 28,000 cy.....	cy	28,000	0.25	0.17
Backfill about structs...	cy	11,700	0.50	0.15
Compactg backfill, str..	cy	3,000	1.00	2.50
Excavation borrow.....	cy	5,000	0.30	0.20
Overhaul.....	Mcy	1,500	0.30	0.90
Riprap.....	cy	950	4.00	3.00
Gravel bedding, riprap..	cy	385	4.00	1.75
blanket, 1st 5,000 cy.	cy	5,000	1.20	1.20
over 5,000 cy..	cy	5,000	1.20	0.80
Concrete in structures..	cy	385	56.00	83.50
Cement, furn & handle.	bbl	575	6.00	5.50
Reinforcement bars, f&p	lb	30,800	0.14	0.16
Untr timb, structs, f&e.	Mfbm	38.3	225.00	250.00
Trtd timb, structs, f&e..	Mfbm	4.5	260.00	270.00
Asph pink brg floor, f&p	sf	2,700	1.00	1.20
Pipe, furn & lay: CM 12" ϕ.....	lf	50	3.00	3.00
18" ϕ.....	lf	550	5.00	3.50
36" ϕ.....	lf	87	9.00	8.25
conc culv, SS, 12" ϕ.[a]	lf	1,000	2.50	2.25
18" ϕ..	lf	100	4.00	4.50
24" ϕ..	lf	50	6.00	7.00
36" ϕ..	lf	110	12.00	12.00
conc pres, HC50 30" ϕ[c]	lf	600	15.00	15.00
36" ϕ	lf	1,200	18.00	16.50
42" ϕ	lf	740	27.00	29.00
54" ϕ	lf	735	40.00	40.00
HC75, 42" ϕ	lf	295	30.00	30.00
HC100, 42" ϕ	lf	135	32.00	33.00
HC125, 42" ϕ	lf	190	37.00	35.00
HE50, 36" ϕ	lf	25	25.00	27.50
HE50, 54" ϕ	lf	120	42.00	43.00
HE125, 42" ϕ	lf	50	40.00	40.00
CI slide gates & lifts, f&i, 12" ϕ.....	ea	42	45.00	40.00
18" ϕ.....	ea	4	80.00	50.00
24" ϕ.....	ea	2	90.00	75.00
Blow-off valves & pipe for siphons, f&i.....	lb	6,000	0.60	0.50
Misc metalwork, f&i...	lb	5,000	0.60	0.43
Earth lng, canal without blending.....	cy	10,000	0.30	0.13
with blending.....	cy	10,000	0.45	0.19
Compact earth lng.....	cy	20,000	0.25	0.24

a Federal specification QQ-C-806 type I, class 2; pr includes installing wasteway culvert on concrete piers
b ASTM standard C 76.
c Concrete must be 4,500-psi minimum compressive strength at 28 days. Portland cement content, not less than 6 sacks (94 lbs each) per cy of concrete. All concrete pipe cement is type 2, low alkali Fed Spec SS-C-192 a.

Tennessee Bridge Piers

Eleven contractors submitted bids to Tennessee Department of Highways and Public Works on four piers for a new bridge across the Tennessee River in Chattanooga just west of the Market St. bridge. Massman Construction Co., low at $634,439, was only 0.4% below second. Herbert M. Bates is state highway engineer, H. D. Long, state construction engineer, and S. M. Squires, division engineer.

Prevailing wage rates in the area are: for operating engineers 2.65 per hour; for laborers, skilled $1.75, semi-skilled $1.65, common $1.45.

1C Massman Const. Co., Kansas City, Mo..... $634,439
2 Hardaway Contracting Co., Columbus, Ga... 637,059
11 J. B. Michael & Co., Inc., Memphis, Tenn... 1,192,901

Completion time: 400 working days

Bids: 3-4-55 Items	Unit	Quantity	Unit Prices 1C	2
Excavation, wet, bridges	cy	1,200	$5.00	$20.00
rock, bridges	cy	3,060	10.00	20.00
Rock drilling, bridges...	lf	144	5.00	10.00
Structural steel.....	lb	6,915	0.50	0.40
Handrail.....	lf	596	10.00	5.00
Conc, cl A.....	cy	11,900	43.00	38.00
seal.....	cy	1,185	20.00	38.00
Steel bar reinforcing...	lb	385,844	0.12	0.11
Temp ladders & navigation lights f&i.....	ls	1	6,000	5,000

Kansas Turnpike Bridges

Kansas Turnpike Authority will pay $504,491 for one continuous welded steel girder bridge and 8 continuous steel beam bridges in Butler County.

1C Rhoades Const. Co., Newton, Kansas..... $504,491
2 Francis Orshek, Inc., Fremont, Nebr..... 510,951
11 Carrothers Const., Paola, Kansas..... 593,413

Completion 260 days; liq damages $175/day

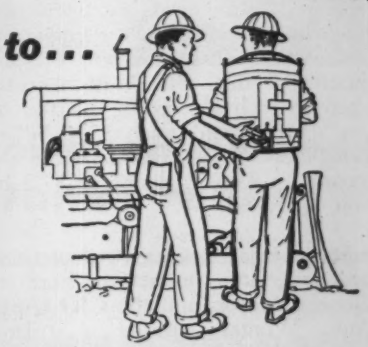
Bids: 4-1-55 Items	Unit	Quantity	Unit Prices 1C	2
Excavation, cl 1.....	cy	3,398	$4.50	$3.00
2.....	cy	176	15.00	40.00
Concrete, class A.....	cy	3,374.3	50.00	53.00
Structural steel.....	lb	1,252,110	0.144	0.14
Bearing devices.....	lb	33,295	0.48	0.40
Cast iron.....	lb	614.4	0.40	0.50
Reinforcing steel.....	lb	535,390	0.13	0.13
Stl bearg piles 10BP 42.	lf	4,566	4.75	5.00
Aluminum handrail....	lf	1,513.2	6.00	5.25
Concrete handrail.....	lf	3,516.6	4.25	5.00
Field office, type B.....	ls	1	6,000	8,000

IT PAYS OFF

to go from

...this

to...



DIXIE INSULATED WATER CARRIER and DIXIE CUPS!

- Cuts loss of valuable time!
- Steps-up job efficiency!
- Cuts contagion, fatigue accidents!

Special Dixie designs teach safety and caution!

DIXIE PORTABLE WATER CARRIER

Keeps Water Cool for Hours! Available with dispenser for Dixie Cups of your choice. Use in central location or carry with shoulder straps.

SEND FOR FREE ILLUSTRATED BOOKLET! WRITE TO:

DIXIE CUP COMPANY, Easton, Pa.

Other plants at: Chicago, Ill., Darlington, S. C., Ft. Smith, Ark., Anaheim, Calif., Brampton, Ont., Canada

"DIXIE" IS A REGISTERED TRADE MARK OF THE DIXIE CUP COMPANY

THE LONGER LOOK:

It looks as if the boom will pick up speed. Production and income will be higher—and probably prices, too.

The general business outlook for the rest of 1955 is excellent. Only six months ago, forecasters thought we would be doing well this year if the economy regained the peaks of 1953. Now the question is just how much higher the new records of 1955 will be. Production and income are sure to be higher—and almost certainly prices.

Gross national product, the sum of the nation's output of goods and services and the most comprehensive gauge of economic activity, topped the best rate of 1953 even in the first quarter of this year. With increases likely in each succeeding quarter, the year's total could reach $376 billion. GNP was $364.9 billion (the old record) in 1953 and only $357.2 billion last year.

• **Strike threat wanes**—Settlement on new long-term contracts by Ford and General Motors and the CIO United Auto Workers—without a strike—is one of the reasons for optimism on the immediate business outlook. A major strike in autos would have put a big dent in industrial production and might have touched off a wave of strikes in other industries, as in 1946.

The Detroit settlement, aside from preventing a halt in production, means higher income for consumers. Not quite half of the 20-cent package—which includes improved pension provisions and 5 cents per man-hour for the supplementary unemployment compensation fund—takes the form of cash income now. But the whole package will be a target for such unions as the steel workers, who are bargaining only on wages this year. Settlements in other industries, including building trades, point to a wage pattern running between 10 cents and 15 cents this year, about twice the usual boosts of the last two years.

These big wage increases and the UAW's winning of the "principle" of the guaranteed wage have their disturbing aspects. Higher industrial prices are almost certain to come, especially if steel grants a large wage increase. And the still uncertain consequences of establishment of guaranteed wage plans may include tough going for small companies. But the effect of bolstering consumer income this year is clear.

• **Consumers and construction**—The spending mood of consumers is another big reason for optimism on the business outlook. As the chart indicates, higher consumer spending is largely responsible for the increase over 1953 in total U.S. output. It has, in fact, taken up all the slack caused by a $12-billion drop in defense spending.

The other major push behind business activity is construction. Consumers, through record demand for residential construction, again are an important factor. But nearly all types of public construction continue to mount. And industrial spending on new plants and equipment is fast recovering.

• **Boom signs on all sides**—Unlike last summer, when construction was one of few industries bucking a general dip in business, signs of a boom are now evident on almost all sides. Even unusually hard-hit industries like coal and textiles—although not boasting prosperity—are doing considerably better than a year ago.

Autos and steel have shown particularly strong improvement in the first half of 1955. Auto manufacturers turned out 4.3 million passenger cars in the six-month period, an all-time record. High dealer stocks will reduce output during the second half, but the year's total should still run about 6.8 million, again a record. Introduction of new models in September may bring another spurt by the year's end.

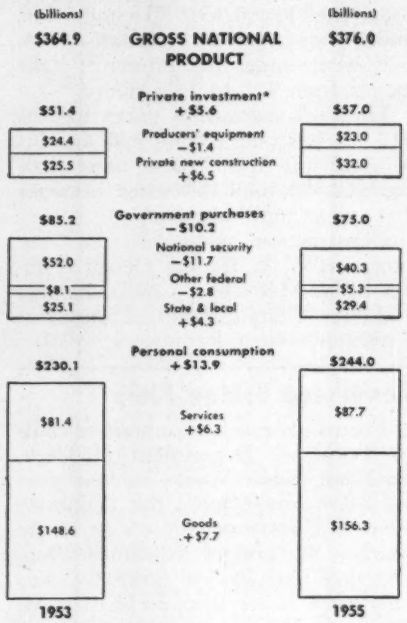
Steel—aided largely by high auto production but also by orders from other durable goods industries and from heavy construction—will produce about 25% more this year than in 1954. Steel tonnage in the first six months was about 57.5 million, and it should be only a few million tons less in the second half.

Nonferrous metals also are running about 25% better than a year ago. Paper and rubber products have been moving up with the general industrial recovery. And the continued boom in construction has pushed up lumber products, other construction materials and construction machinery—each enjoying increases in shipments of 5% to 15% over last year.

Industries that have had particularly strong surges in the first half of 1955—such as appliances, rubber, textiles and steel—will probably hold near present levels or dip slightly during the second half. But continued rises in consumer income, which may top $300 billion by year-end, and the disposition of consumers to spend their incomes promise to maintain most of the gains already recorded, and pull other industries to new peaks.

(*B&F continued on page 78*)

Consumer spending, construction are raising business to record heights



*Change in business inventories and net foreign investment not itemized

SOURCE: U. S. Dept. of Commerce; 1955 estimated by McGraw-Hill Dept. of Economics

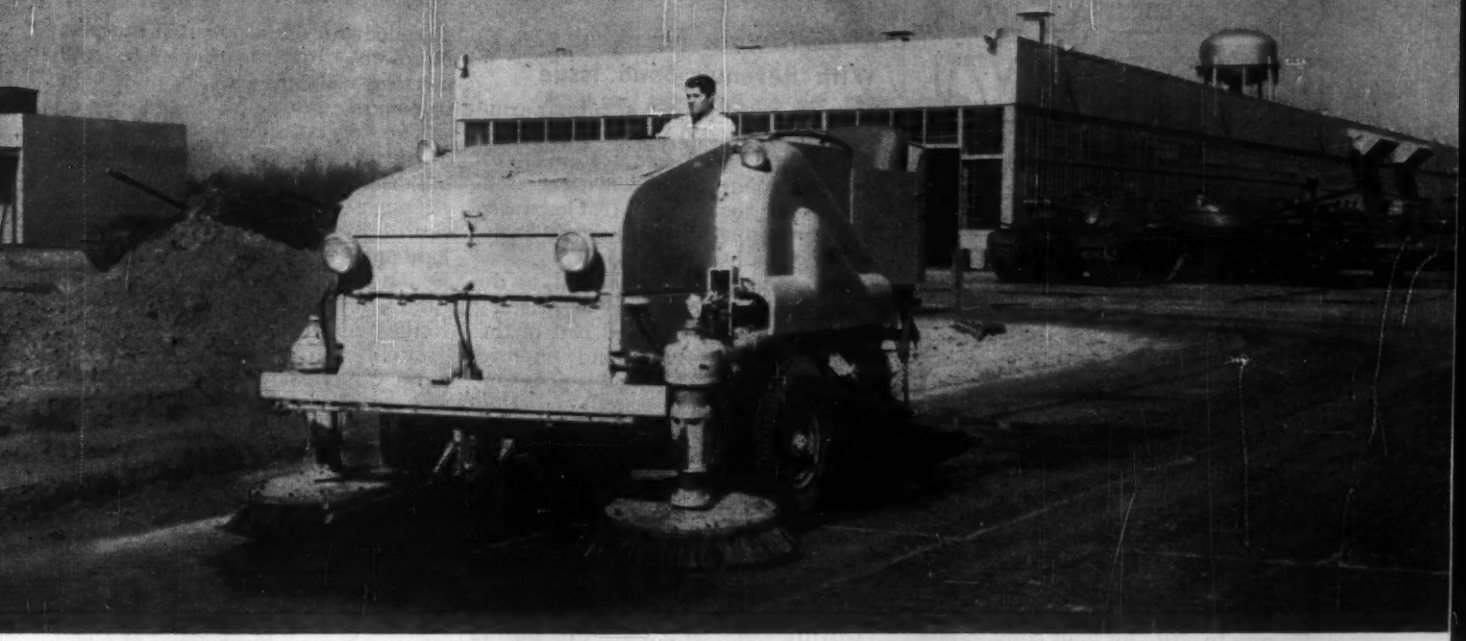
Boxcar Shortage Continues

The end of the truck-driver strike in 11 western states will have only a limited effect on easing the boxcar shortage that is forcing sharp cutbacks in lumber and plywood shipments from the Pacific Northwest (ENR June 16, p. 133).

Furthermore, the Department of Agriculture's order to halt grain loadings in the north central states during the week of June 7-13 brought only slight relief.

Charles W. Taylor, Interstate Commerce Commission Service Director, says there's no relief in sight until October.

Cleans Up Clay, Piles Up Records



at Newark, Delaware . . . Chrysler-powered Sweeper puts in full time keeping army tanks rolling

Clay can't stop a General Patton. But at the government tank plant at Newark, Delaware, clay from tank tracks cannot be allowed to accumulate. If it piles up on the test track, clay and mud might complicate test operations. And that's where the sweeper comes in.

For three years now, the Newark Plant has relied upon a single Wayne Sweeper to keep their mile-long test track clean, their paved streets clear of debris. The job is a big one . . . it keeps the sweeper in operation eight hours a day, five or six days a week. Clay flattened out onto a concrete track is difficult to remove and the sweeper's double gutter brooms work hard.

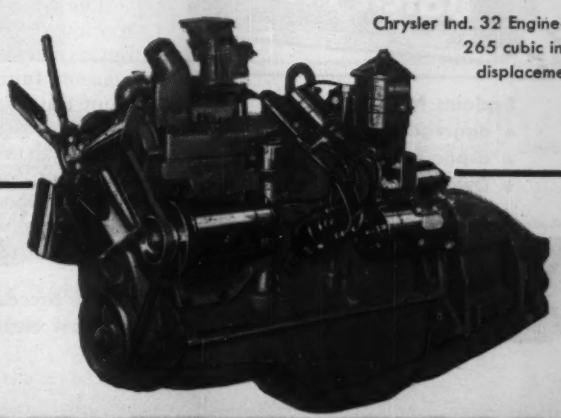
The Newark Tank Plant's Wayne Sweeper has travelled some 46,000 miles in the performance of its job and is still going strong. Its Chrysler Ind. 32—265 cubic inch displacement engine has required nothing beyond routine maintenance care. Plant maintenance superintendent reports operating costs—gas and oil consumption—are light despite heavy operation.

Here again we see demonstrated the kind of service users can—*and do*—expect from good equipment, Chrysler-powered.

If you want to know more about Chrysler Engines as power for your equipment, write:

Dept. 96, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.

"One-Man Sanitation Department" . . . that's what they call the Wayne Sweeper at Newark, Delaware Tank Plant. Chrysler Ind. 32 Engine equipped with heavy-duty four-speed transmission powers brushes, hopper-filling mechanism, and travels the sweeper at traffic speeds. Sweeper is a product of the Wayne Manufacturing Co., Pomona, California.



Chrysler Ind. 32 Engine—
265 cubic inch
displacement

CHRYSLER
INDUSTRIAL ENGINES
INDUSTRIAL ENGINE DIVISION • CHRYSLER CORPORATION

HORSEPOWER
WITH A
PEDIGREE

NEW!
NEW!
NEW!

Up-to-date facts on new Tri-Forged welded and Tri-Lok interlocked grating and stair treads

Here's vital information for ready reference on the new Tri-Forged steel grating and stair treads, plus latest information on Tri-Lok interlocked products. This fact-filled catalog gives you installation specifications, types of grating and stair treads available, and safe load tables. Be sure to write for your copy today.

For your free copy
write department D-2406

DRAVO CORPORATION
Pittsburgh 22, Penna.
National Distributors

send for your copy

Explains New
- aggregate measuring
- asphalt measuring
- Dyna-mix Pugmill
- other new principles

55-52-B

see your B-G distributor or write
Barber-Greene
AURORA, ILLINOIS, U.S.A.

Airport Work Financed With Revenue Bond Issue

In an unusual type of airport construction financing, Dade County Port Authority last week sold $21 million of revenue bonds to underwriters at a net cost of about 3.20%. This was a lower price than the authority's financial advisers had expected.

About half the bonds will go to build a big new terminal at Miami's International Airport, and part of the rest will go to build and improve hangar facilities. The bond issue is supported solely by lease rentals and other income of the airport. The authority also operates the profitable Venetian Causeway between Miami and Miami Beach. It may issue additional bonds of equal rank to finance a toll road across Miami between the airport and the causeway.

Dallas-Fort Worth Toll Bonds Snapped Up by Underwriters

Underwriters last week bid the highest price ever seen for a toll-road issue. The bonds were the $58.5-million offering for the 30-mile "bridge" turnpike between downtown Dallas and downtown Fort Worth. A group of about 140 investment banking firms, headed by powerful First Boston Corp., of New York, and First Southwest Corp., of Dallas, offered a price that means a net interest cost to the Texas Turnpike Authority of only about 2.93%.

Two other underwriting groups were also in the running with bids that would have meant slightly higher interest costs.

• **Too generous?**—It was a special price for a special turnpike, for the road seems in a particularly good position, barring gas rationing or some similar contingency. But by early this week it looked as though the underwriters might have been a little too generous. They were having trouble selling the bonds in a tightening money market.

The yield on the Texas bonds is far too low for the usual heavy pike-bond buyers, life insurance companies and pension funds, who also stayed away from the Florida toll-road issue. This means underwriters have to concentrate their sales efforts on individuals and corporations who pay full income taxes, and thus are interested in the tax-exempt feature that goes with all municipal bonds.

• **No precedent**—At any rate, the low interest cost of the Texas issue sets no precedent for other potential turnpike borrowers. Investment bankers and investors will consider each project on its own merits.

The biggest such project on the calendar—the $400-million Illinois toll-road program—is still being delayed although the Supreme Court has turned down the legal objections of local property-owners who appealed from a lower court. The state legislature is now considering amendments to the original toll-road act. And Evan Howell, chairman of the Illinois Toll Road Commission says that engineering reports of construction costs and revenues will have to be updated before the bonds can be sold.

Business Briefs . . .

• **Ford plans more expansion**—Ford Motor Co. has awarded a contract to H. K. Ferguson Co. to add 300,000 sq ft to Engine Plant No. 2 at Cleveland. A major realignment of facilities and a 70,000 sq ft addition are planned at the Cleveland foundry.

• **Big plans for GM**—Reports are that General Motors Corp. is about to announce another mammoth expansion of plant facilities. Buick's share is said to run about $100 million for foundry, transmission, and engine facilities. Fisher Body Division will run over $60 million. Both Chevrolet and Oldsmobile are expected to have plans, too.

• **Weyerhaeuser Timber Co.** will build a sulphite pulp mill costing over $20 million at Cosmopolis in southwestern Washington.

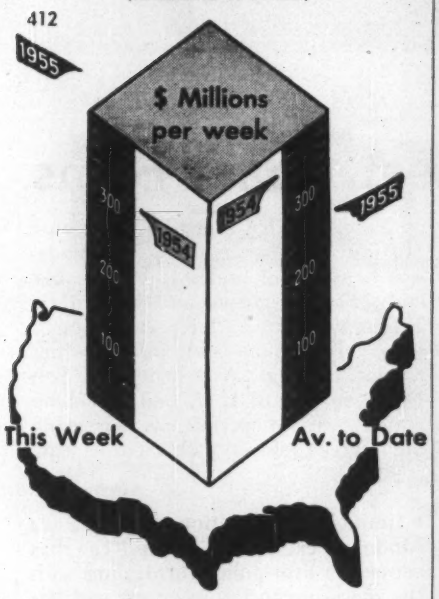
• **Penn-Dixie Cement Corp.** plans to expand capacity of its Petoskey (Mich.) plant 50%; production is expected to reach 2,575,000 bbl by Sept. 1.

• **House prices climb**—The downward drift in prices of existing homes apparent in the spring of 1954 has reversed itself in some cities, according to a survey by the National Association of Real Estate Boards. In many other areas, prices of existing homes have become stabilized. In some areas, prices of new homes are on the upward trend.

• **More cement expansion**—Bessemer Limestone & Cement Co. has started $3.6-million addition to its Bessemer (Pa.) plant. This is the first phase of a $9-million program.

Activity This Week

As reported to ENR
(In millions of dollars)



Amount of contracts let

	This Week	Cumulative 25 wks 1955	1954	% chge
Federal	$38.7	$842.0	$549.3	+53
State and Municipal	147.9	2,515.1	2,223.5	+13
Total public	186.6	3,357.1	2,772.8	+21
Total private	225.5	5,627.9	3,730.8	+51
U. S. Total	$412.1	$8,985.0	$6,503.6	+38
Contracts by type of work				
Waterworks	$3.5	$122.4	$111.6	+10
Sewerage	4.0	192.2	186.4	+3
Bridges	21.0	226.6	189.7	+19
Highways	67.8	1,008.5	810.8	+24
Earthwork, Waterways	17.3	267.2	134.2	+99
Buildings:				
Public, excl. hsg.	43.1	798.4	828.9	−4
Housg., public	1.7	134.5	94.5	+42
Housg., private	113.2	3,278.9	2,049.3	+60
Commercial	27.4	793.5	610.6	+30
Industrial	69.9	1,209.5	919.7	+32
Unclassified	43.2	953.3	567.9	+68
Total	$412.1	$8,985.0	$6,503.6	+38

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

New capital for construction

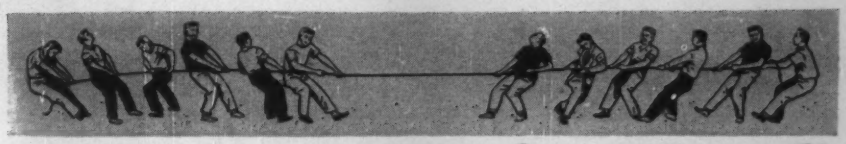
(millions of dollars)

	Week of June 16 1955	Cumulative 24 wks 1955	% chge '54-'55
Corporate securities	$71.5	$1,616.0	+13
State and municipal:			
All except housing	124.8	1,967.7	−25
Housing	...	46.2	+8
Federal loans	0.9	52.7	−9
Federal aid	...	95.0	+73
Total non-federal	$197.2	$3,777.5	−10
Federal appropriations:			
In U. S.	...	59.2	+6
Outside U. S.	...	...	−100
Total new capital	$197.2	$3,836.7	−10

ENR cost and volume indexes, 1955

		Base years = 100 1913	1926	1949
Construction Cost	6/16	658.03	316.31	137.95
	6/2†	655.96	315.32	137.51
Building Cost	6/16	466.31	252.07	132.55
	6/2	464.82	251.27	132.13
Volume	May	731	297	211
	Apr.	609	248	176

† Official monthly index for June

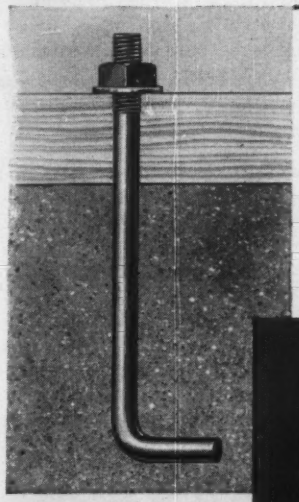


ANCHOR "MEN"

OF THE *Lamson* LINE...

Because every fastener is designed to do a specific holding job, it takes a rugged fastener when the going's rough.

Here are the "brutes" of the Lamson Line, backed by 89 years of experience and proven in use under the most rugged conditions.

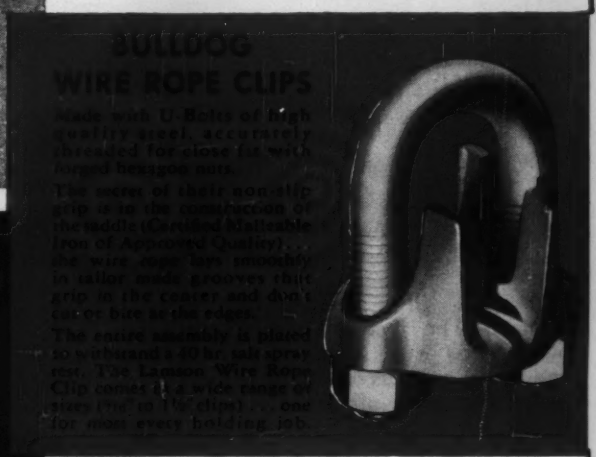


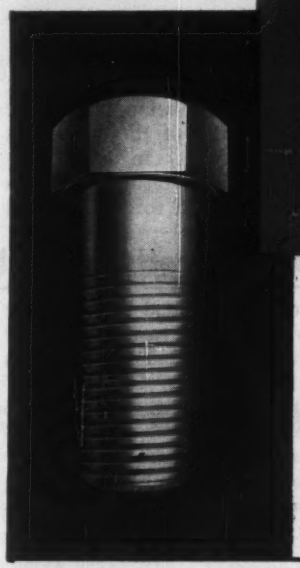
LAMSON ANCHOR BOLTS

For fastening wood to concrete. Made from mild carbon steel with a right angle bend which acts as an "anchor hook".

These anchor bolts are now required in many building codes and are made to meet such specifications.

There is a 2" hook at one end and a 2" thread at the other. Sizes range from 6 to 20 inches in length and in two diameters—⅜" and ½". Furnished with washer and square nut.





LAMSON 1035 CAP SCREWS

The real "workhorse" of the construction and heavy equipment field. Available in sizes from 3/16" x ½" to 1½" x 12" and fine or coarse threads. After years in the field, Lamson 1035, High Carbon, Heat Treated Cap Screws are proving to be one of the most versatile fasteners available.

Lamson & Sessions

The LAMSON & SESSIONS Co.
1971 West 85th Street • Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio
Birmingham • Chicago

Large Bolts • Cotters
Square and Hex Nuts • Weather-tight Bolts • Bent Bolts
Phillips and Clutch Head Screws • Lock Nuts • Cap Screws

Another Drive Is on for . . .

Unionization of Engineers in West Coast Firms

New efforts to extend unionization of engineers are under way in the comparatively fertile fields of California.

Again it's the International Union of Operating Engineers (AFL). The target is a group of subprofessional engineering employes of private engineering firms and testing laboratories, located in the San Francisco Bay Area and having field control of placing compacted fill. Involved are nine firms which the union claims have about 70 employes—inspectors on soil compaction work—on whom the union's attention is focused.

It's not a new development. The operating engineers' contract with the Bay Counties Civil Engineers and Land Surveyors Assn. (ENR May 13, 1954 p. 28) covers inspectors, although the classification is reported to be little used.

• **Negotiations**—So far, none of the firms has signed the contract which Local No. 3 has offered. But pressure is mounting.

Discussions have been under way for several weeks between the union and two of the firms—the San Francisco office of Dames & Moore, and Woodward, Clyde & Associates in Oakland. The labor unit plans to start negotiations with seven other firms and initial contacts already have been made with some of them. Included in the list are: A. J. Hales & Co.; Abbot A. Hanks, Inc.; Charles H. Lee Soil Testing Laboratory; Porter, Urquhart, McCreary and O'Brien; and Pacific Engineering Laboratory.

• **Proposed contract**—The contract which the union has offered would cover "inspectors" on soil compaction work. Rates would presumably equal or approximate those contained in the BCELSA contract—$3.07½ for senior inspectors and $2.80 for other inspectors.

Most of the men the union seeks to cover are subprofessionals. Some are fairly recent college graduates headed for a professional status. The majority are non-college men, some of whom could become professionals with more experience and further part-time schooling.

• **Not clear sailing**—Amid the organizational activities of the operating engineers the long-standing jurisdictional dispute between that group and the Engineers & Scientists of America is already beginning to rumble in the background. Although no special attempt has been made by Engineers & Scientists of California, an affiliate of ESA, to organize the group, many of them are reportedly joining without solicitation. Almost all of the affected employes of one soils engineering firm are claimed to be in ESA's camp already.

In answer to questions on the operating engineers' activities, ESC secretary Howard Lane said that "to my knowledge, the operating engineers have not approached any employes of the firms involved."

A situation with similar implications developed in San Diego this spring on the heels of the AFL operating engineers' field survey agreement with Southern California contractors (ENR Jan. 20, p. 83). Under the broad terms of the agreement, subcontractors who didn't sign were also required to use only operating engineers as members of field survey parties. In some cases, subcontractors on subdivision work within the agreement had employes who belonged to the San Diego Chapter of the Engineers and Architects Assn. (an ESA affiliate), causing the operating engineers to strike when mixed forces appeared on a job. The EA unit took it to court but lost. The agreement, once made, was held lawful under California law and subject to enforcement by strikes, although strikes to force employes to leave one union and join another would be illegal. As a result, the San Diego chapter of EAA said it had no choice but to permit its surveying members to join up with the operating engineers.

• **Employers' position**—Dames & Moore's executive committee has adopted a firm policy for dealing with the union organization efforts and has issued this statement: "Dames & Moore will recognize and deal with such unions representing any classification of our employes as may be properly certified by the NLRB after an appropriate election." The firm has indicated it is prepared to resist strike action if necessary.

In the case of Woodward, Clyde and Associates, who have also conditioned their acceptance of a contract on the result of a properly conducted election, the union has referred the matter to the Alameda County Building Trades Council. As a result, the firm has just been put on the council's "unfair list," with picketing of Woodward projects now a possibility. Some feel the situation may parallel the one

(*Continued on page 82*)

Wages Up Another Notch

Two-year contracts and sizable wage increases were still the trend as more of the building trades wound up their talks last week. Here are some of the scores:

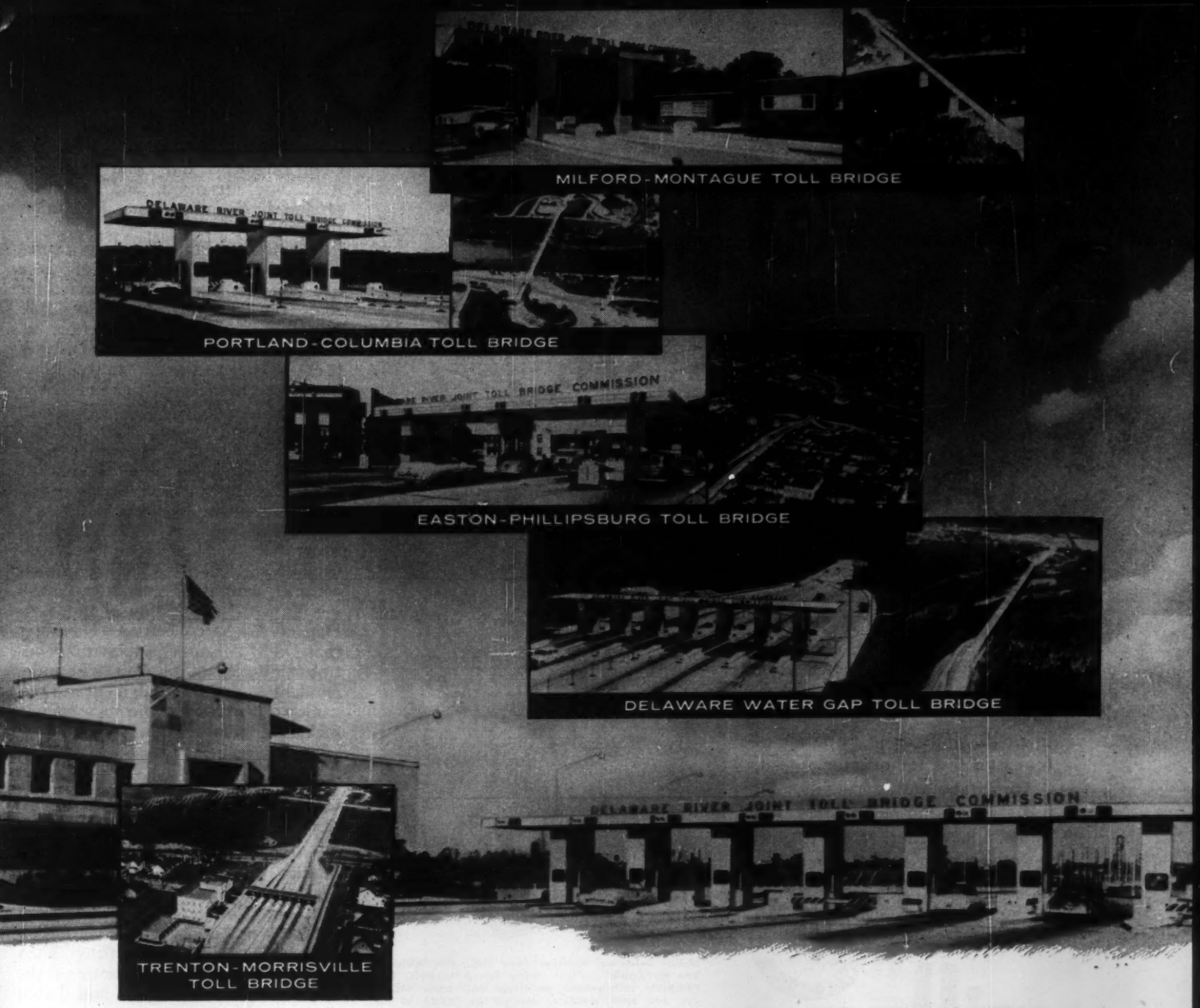
• Work stoppages which threatened to tie up construction in 46 northern California counties were checked by a new two-year contract between AFL operating engineers and northern and central chapters of the AGC. The union won a 12.5-cent wage increase for each year—plus a $3.00 per day allowance in certain areas where free camp facilities are not provided.

• In Arizona, structural ironworkers got a 15-cent boost under a two-year contract which grants another increase of 12.5 cents next year. Reinforcing ironworkers were raised 12.5 cents with a similar boost scheduled for next year. Employers' welfare contribution will be upped another 7.5 cents in July, but free zone changes in Phoenix, Tucson and Yuma will mean smaller travel allowances.

• Ironworkers in western Washington settled with the Tacoma, Seattle and Mountain Pacific Chapters of the AGC for a 12-cent boost now and another 10 cents Jan. 1.

• Colorado laborers and teamsters agreed to a 5-cent increase under a new contract effective July 1. This will give Denver scales a range of $1.95 to $2.45, with rates elsewhere in the state slightly lower.

• The Bay County District Council of Carpenters, with 15,000 members in four San Francisco Bay Area counties, signed a one-year contract with the AGC, granting a 12.5-cent increase retroactive to May 23 with another 10-cent boost next May 1. It makes the present rate $2.90 and gives millwrights and foremen differentials of 20 cents and 33 cents.



These 5 Delaware River crossings bridge all their toll problems with TALLER & COOPER equipment

The Delaware River Joint Toll Bridge Commission chose Taller & Cooper equipment for *five* separate installations in its chain of toll bridges over the Delaware River. This is proof in practice of the efficiency and operating reliability of Taller & Cooper Toll Collection Systems. As it does on all major toll facilities in the United States, T&C equipment solves toll problems before they start. Engineers and highway planners are invited to take advantage of Taller & Cooper's 25 years of experience in the design and manufacture of toll equipment in planning their toll installations.

1930-1955
25 YEARS OF LEADERSHIP IN TOLL EQUIPMENT

TALLER & COOPER, INC.

ENGINEERS • MANUFACTURERS

TOLL BOOTHS—TOLL COLLECTION SYSTEMS • 75 FRONT STREET, BROOKLYN 1, N. Y.

TALLER & COOPER TOLL COLLECTION EQUIPMENT IS USED ON EVERY MAJOR TOLL FACILITY IN THE UNITED STATES

in Shipbuilding as in other great industries
MILLER WELDERS are preferred

St. Louis Shipbuilding and Steel Co., largest builders of inland towboats in the world, require welds that will withstand a maximum amount of abuse.

Look anywhere in St. Louis Shipbuilding's mammoth yard and you will see Miller Selenium Rectifier type D.C. arc welders—in single units or in batteries of four and five for greater output.

For dependable welds, St. Louis Shipbuilding prefers the Miller S.R. welder. Miller is glad to be aboard.

ARC - SPOT miller GENERATORS WELDERS

Miller Selenium Rectifier type D.C. Arc Welders are available in four wide range models. For complete information on these and other Miller arc and spot welders, contact us today at no obligation, of course.

miller
ELECTRIC MANUFACTURING COMPANY, INC.
APPLETON, WISCONSIN

Distributed in Canada by Canadian Liquid Air Co., Ltd., Montreal, P.Q.

in hundreds of thousands of projects around the world...
HĪCO supports have a 100% SAFETY RECORD!
*Trade Mark U. S. Patent No. 2,687,193. Other Patents Pending

HĪCO ADJUSTABLE HORIZONTAL FORM SUPPORTS
A product of WEBRIB STEEL CORPORATION, 120 Broadway, N. Y. 5, N. Y. DIgby 9-1650

which existed when the Bay Counties Civil Engineers and Land Surveyors Assn. was organized, and picketing produced client pressure for union recognition.

Whether such activity constitutes an unlawful secondary boycott is a question that may not be answered for some time. In many instances, the NLRB may not take jurisdiction because of its limited jurisdictional yardsticks. That was one of the stumbling blocks to the ESA in the San Diego dispute.

If the NLRB won't assert jurisdiction, the California Conciliation Service could be called upon to conduct elections. But no such election has yet been sought by the union.

A spokesman for Dames & Moore feels that the firm's employes who would come under the proposed union contract are "professional employes" insofar as the application of the Taft-Hartley Act is concerned. He notes that D&M personnel, supervising control of fill placing, must exercise independent engineering judgment in their work. They are not, he says, merely making density tests.

TVA Construction Workers Go Back To School Again

Journeymen employed on three TVA construction projects are attending classes, outside of working hours, to improve their efficiency on the job. The program is sponsored by local union-management cooperative committees, representing TVA management and craft unions of the Tennessee Valley Trades and Labor Council.

At the present time, 490 journeymen are enrolled. They come from the John Sevier steam plant near Paducah, Ky., and the Gallatin steam plant near Nashville, Tenn. Their crafts include steamfitters, boilermakers, carpenters, sheetmetal workers, electricians, plumbers, machinists and ironworkers.

Classes are held at the plants and cover blueprint reading, mathematics, special equipment, electronics and precision measuring. Other subjects related to the work of the different crafts may be elected.

The courses run for 32 hours—in two or four-hour sessions—but may be extended for an additional 32 hours for those desiring more advanced work. Instructors are TVA employes, drawn primarily from the ranks of engineers and foremen. They are paid by the local county school systems which are reimbursed from state and federal vocational funds.

OFFICIAL PROPOSALS

Bids: July 5, 1955

Contract O & M 310

THE PORT OF NEW YORK AUTHORITY
LaGuardia Airport
Paving and Drainage
Improvements

Sealed proposals for furnishing all labor, material and equipment for the performance of paving and drainage improvements at LaGuardia Airport, Flushing, N. Y., will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M., Tuesday, July 5, 1955, at which time, and place said proposals will be opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Dept., Room 1001, where a receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, June 23, 1955

Bids: July 7, 1955

Contract O & M 294

THE PORT OF NEW YORK AUTHORITY
TOLL BOOTHS FOR PARKING LOTS
LA GUARDIA AIRPORT
PROPOSAL NO. 621

Sealed proposals for the construction and erection of toll booths for LaGuardia Airport, Flushing, N. Y., will be received in the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M., Thursday, July 7, 1955, at which time and place proposals will be opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

Bids: June 30, 1955

Fairfax County, Virginia
Integrated Sewerage System

Sealed bids will be received by the Board of County Supervisors of Fairfax County, Virginia, at the Office of the Sanitary Engineer, County of Fairfax, Fairfax, Virginia, until Thursday June 30, 1955, at 2:00 o'clock, P.M., Eastern Daylight Time, for the construction of:

CONTRACT NO. 40: Approximately 1900 lineal feet of 8 inch sanitary sewers and appurtenances, and 5500 lineal feet of 14 inch force main.

Plans, specifications, and contract documents may be examined and copies thereof may be obtained at the Office of the Sanitary Engineer, upon payment of Ten Dollars ($10.00) per set, which amount shall not be returnable.

Contractors, whether resident or non-resident in Virginia, will be required to show evidence of a Certificate of Registration as required by Chapter 7 of Title 54 of the Code of Virginia before their bids will be considered, if the bid is $20,000 or more.

Each bid must be accompanied by cash, certified check, or acceptable bidder's bond in an amount not less than Five Percentum (5%) of the amount of the total bid. The successful bidder will be required to furnish a performance and maintenance bond in a penal sum equal to the full contract price.

COUNTY OF FAIRFAX, VIRGINIA
By: Harry L. Hale
Sanitary Engineer

Dated: June 8, 1955

Bids: July 5, 1955

Contract O & M 313

THE PORT OF NEW YORK AUTHORITY
BAYONNE BRIDGE
PAVEMENT RESURFACING
ON APPROACH SPANS

Sealed proposals for furnishing all labor, material and equipment for resurfacing pavement on the approach spans of the Bayonne Bridge in Port Richmond, N. Y. and Bayonne, N. J., will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M., Tuesday, July 5, 1955, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Dept., Room 1001, where a receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, June 23, 1955

Bids: July 7, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 29-A (1927) ROUTE 29 (1953), SECS. 5B and 4A

Route 29A (1927) Route 29 (1953), Sections 5B and 4A, from Byram to Kingwood Station, Paving, in the Township of Kingwood, Hunterdon County. Length= 3.832 miles. The principal items of work are:

Estimated:
- 43,600 sq. yds. Gravel Shoulder, 3" thick
- 54,500 sq. yds. Pen. Mac., Surface Course, Hot Applic., 3" thick
- 149,875 gals. Bituminous Material, 1st & 2nd Hot. Application
- 54,500 sq. yds. Pen. Macadam, 3rd Hot Application
- 17,700 lin. ft. Beam Guard Rail

Bids for the above will be received at the office of the State Highway Department. in the CAFETERIA, State Highway Office Building, 1035 Parkway Ave., Trenton, N. J., on Thursday, July 7, 1955, at NINE o'clock (9:00 A.M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equiment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTEEN DOLLARS ($15.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00; (2) a proposal bond for a sum of not less than fifty (50%) of the total price bid for the project; (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: June 30, 1955

Moses Lake Flight Center
Larson Air Force Base,
Washington

BOEING AIRPLANE COMPANY

Sealed bids are hereby invited for earthwork, construction of paving and utilities, blast and dust control at Moses Lake Flight Center, Larson Air Force Base, Grant County, Washington, for the Boeing Airplane Company, Seattle Division.

The work includes but is not limited to the following:

1. Earthwork for paving hereinafter noted.
2. Earthwork for a future hangar and its adjacent paving.
3. Airplane use paving as follows: Concrete Apron, Apron Approach and asphaltic concrete Outrigger Paths.
4. Construction of asphaltic concrete and gravel surfaced roads.
5. Outside Utilities including the following: Water and Air systems; Storm Sewer system; Electrical Distribution; relocation of existing Electrical and Communications lines to outlying Larson Air Force Base structures.
6. Relocation of an existing Personnel Shelter and field office and provision of utilities thereto.
7. Security fencing including salvage of existing.
8. Dust Control.

This contract will constitute a sub-contract under a prime contract between Boeing Airplane Company and the United States Government.

Bid, Performance and payment bonds are required.

Maximum of two sets of contract documents per bidder may be obtained upon deposit of one hundred dollars ($100.00) per set at the offices of Naramore, Bain, Brady & Johanson, Architects and Engineers, 904 Seventh Avenue, Seattle 4, Washington. Deposits will be refunded upon return of complete documents in good condition to the offices of the Architect-Engineer.

Complete sets of bid documents will be available for inspection at the following locations:

- Associated General Contractors of America, 215 W. Harrison, Seattle.
- Plan Bureau, 2413 Western Avenue, Seattle.
- Mountain Pacific Chapter of Associated General Contractors, Benjamin Franklin Hotel, Seattle.
- Associated General Contractors of America, 452 St. Helens, Tacoma.
- Construction Council, Spokane Hotel, Spokane.
- Associated General Contractors of America, Eastern Washington Builders' Chapter, 1207 N. Washington, Spokane.
- Associated General Contractors of America, So. 102 Stevens, Spokane.
- Builders' Exchange, Builders Exchange Building, Portland, Oregon.
- Wenatchee Construction Council, Wenatchee, Washington.

Sealed bids will be opened and publicly read at 2:00 P.M., P.S.T., June 30, 1955, in Conference Room 32 G-1 of the Engineering Building, Boeing Airplane Company, Seattle, Washington.

OFFICIAL PROPOSAL

RATE: $1.80 per line (or fraction) per insertion.

CLOSING DATE: 10:30 a.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: July 13, 1955

Harbor Construction Work for United States Naval Facilities at East Rota, Spain

(Advertisement for Bids)

Brown-Raymond-Walsh, Prime Contractors for the construction of United States Military Bases in Spain, will solicit bids for the harbor construction work for United States Naval Facilities at East Rota, Spain.

It is expected that the scope of the work will include: Harbor dredging of approximately 2,300,000 cubic meters. Construction of breakwater and marginal wharf, comprising approximately 2,600,000 tons of rock and concrete. Construction of a tanker unloading pier and trestle approach.

The core of the main breakwater will consist of quarry rock; the principal armor will consist of 16 and 25 tons tetrapods and natural stone; the marginal wharf will be gravity type requiring 50-ton pre-cast concrete blocks.

Bids will be considered only from Spanish-American combined enterprises each of which are composed of at least one established Spanish construction company and at least one established American construction firm whose combined firms can meet the following conditions:

(a) They must furnish satisfactory evidence that they have completed similar projects recently. As a consideration of award, bidders will submit statements to the Prime Contractor showing the volume of similar work they have done in the past five years, by years, listing the amount of each contract, where constructed, the owner, size and time consumed in completing the projects.

(b) They must be able to supply from within their own organization experienced managerial and technical personnel.

(c) The successful combined enterprise will be required to complete the work within 30 months from the date they receive the notice to proceed.

(d) Certified financial statements will be required by the Prime Contractor as proof of the capability of the low bidder to finance mobilization of the job and all construction expense above current payments.

The successful combined enterprise may sublet the work for dredging and related activities to an American or European subcontractor, provided that such secondary sub-contractor is first approved by Brown-Raymond-Walsh.

The combined enterprise will be required to furnish all equipment, material and supplies required to complete the work in accordance with the specifications. Such equipment, material and supplies, including those of any secondary sub-contractor will be allowed to enter Spain duty-free provided it is guaranteed that all items not consumed in the completion of the work will be removed from Spain upon completion of the project.

Payment for the work will be made in both pesetas and U.S. Dollars. For comparison of bid purposes only, the rate of exchange will be fixed at forty-three pesetas to one U.S. Dollar.

Sealed bids, endorsed "Bid for Rota Waterfront Work", will be reecived until 6:00 p.m. Wednesday, 13 July, 1955, at the offices of Brown-Raymond-Walsh, Edificio Espana, Madrid, and at that time publicly opened. Bids will be accompanied by a provisional bid bond in the form of a Bank Draft or Certified Check for not less than one hundred fifty thousand dollars ($150,000.00) or six million four hundred fifty thousand pesetas (6,450,000.00 pesetas) to guarantee that the successful bidder will execute the contract on receipt of the Notice of Award. Upon execution of the contract documents all provisional bid bonds will be returned. Bids must further be accompanied by a performance bond either in the form of a letter from an approved American Surety Company guaranteeing performance in the amount of five million dollars ($5,000,000.00) or as a guarantee from an acceptable Spanish bank in equivalent peseta amount.

Drawings, specifications and other bidding information may be obtained 30 May, 1955, and thereafter upon application to the office of Brown-Raymond-Walsh in Madrid. Deposit of Certified Check, in the amount of two thousand pesetas (2000 pesetas) payable to the account of Brown-Raymond-Walsh will be required as security for the safe return of each set of the bidding data.

OFFICIAL PROPOSALS

Bids: July 7, 1955

Soil Explorations and Foundation Investigations

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Daylight Saving Time, on July 7, 1955 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON BRUCKNER BLVD., SECTION I, FROM MAJOR DEEGAN EXPRESSWAY AND TRIBOROUGH BRIDGE TO THE BRONX RIVER EXPRESSWAY, CITY OF NEW YORK, BRONX COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-77

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York.

(b) Mr. M. E. Goul, District Engineer, 325 West Main Street, Babylon, Long Island, N. Y.

(c) Mr. Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of the deposit.

The Engineer's estimate of cost for this work is $46,300.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,315.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

Bids: July 7, 1955

New Jersey Turnpike Authority

ADVERTISEMENT FOR PROPOSALS
CONTRACT NO. W-15

Proposals are invited for Contract No. W-15 which involves the construction of a sewage treatment plant, connecting sewers, and outfall sewer, and other incidental work in connection with construction of Service Areas 6-S and 6-N in Hamilton Township, Mercer County, New Jersey, all in connection with the construction of the Widening of the New Jersey Turnpike.

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock, Eastern Daylight Saving Time, on the morning of July 7, 1955, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after June 17, 1955, at the office of the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, and at the office of the Consulting Engineer, Elson T. Killam, 529 Millburn Avenue, Short Hills, New Jersey. Contract documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. The payment will not be refunded and contract documents are not required to be returned.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

June 14, 1955

U. S. Government

Department of Commerce, Bureau of Public Roads, June 13, 1955. SEALED BIDS will be received at the office of the Park Superintendent, Homestead, Florida, until 11:00 a.m., E.S.T., JULY 8, 1955, for Project 1A2-6A1, Everglades National Park, Dade and Monroe Counties, Florida. Construction of oolite rock embankments, from stockpile, for highway and parking areas, processing oolite rock base, bituminous prime and surface treatment and other work from West Lake 8.550 miles to Flamingo. The approximate quantities of the more important items are: 70,000 cu. yd. Marsh Excavation, 520,000 cu. yd. Excavation of Oolite Material, 2,310,000 half mile- cu. yd. Overhaul, 177,000 sq. yd. Shaping and Compacting Rock Base and 120,000 gal. Bituminous Material. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the offices of the Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, and Gatlinburg, Tennessee. H. J. Spelman, Division Engineer.

SEARCHLIGHT SECTION

This index is published as a convenience to the reader. Every care is taken to make it accurate but SEARCHLIGHT SECTION assumes no responsibility for errors or omissions.

Aberthaw Co.	89
Acorn Iron & Supply Co.	89
Ambursen Dam	89
Anderson Equipment Co.	88, 89, 90, 91
Arabian American Oil Co.	86
Austin Co., The	87
Badgett Mine & Stripping Corp.	88
Boyer, R. H.	90
Brown-Pacific-Maxon	87
Contractors Machinery Co.	89, 90, 91
Cooney, G. A.	88
Davidson Pipe Co., Inc.	90
Deatherage & Son, G. F.	88
Drachman Steel Corp.	90
Ehrbar, Inc., Edward	89
Euclid-Memphis Sales Inc.	89
Eveready Supply Co.	88
Forsythe Equipment Co., Inc.	88
Foster Co., L. B.	90
Frantz Tractor Co., Inc.	88
Gannett Fleming Corddry & Carpenter Inc.	87
Gillis & Co.	91
Glace & Glace, Inc.	87
Globe Pipe & Fitting Co.	90
Goodman, Al. J.	91
Greenheart Inc.	90
Guion, H. P.	88
Hartford, City of	86
Judge & Co., Inc., Frank M.	91
Lestan Corp.	89
McClung-Logan Equipment Co., Inc.	91
McKee & Co., Arthur	87
Midwest Steel Corp.	91
Mississippi Valley Equipment Co.	90
Moto-Crane-Service Inc.	91
Murray, David W.	88
Ohio Machinery Co.	91
Pfotzer, E. & E. J.	90
Rental Equipment Co.	89
Rish Equipment Co.	91
Sherman Crane & Service Inc., Roger	90
Smith Co., Hy.	88
Smith Inc., L. B.	89
Stanhope Inc., R. C.	90
Sverdrup & Parcel Engineering Corp.	87
Swabb Equipment Co., Inc., Frank	89
Tamblyn System	88
Toledo Testing Laboratory	87
Tractor & Equipment Co.	89
Trenton, Michigan, Village of	87
Tuckahoe Construction Co., Inc.	89
Ukropina-Polich-Karl	89
Union Building & Equipment Co.	91
Van Keppel Co., The G. W.	91
Vilbro Equipment Co., Inc.	89
White Co., David	88
Williams Construction Co.	89
Wilson Engineering Co.	88

OFFICIAL PROPOSALS

Bids: July 14, 1955

The Hydro-Electric Power Commission of Ontario

ST. LAWRENCE POWER PROJECT
POWERHOUSE HEADWORKS
HEADGATES, HOISTS AND EMBEDDED PARTS

SEALED TENDERS, in quadruplicate, addressed to the undersigned, 620 University Avenue, Toronto 2, Ontario, and clearly marked
"TENDER FOR ST. LAWRENCE POWER PROJECT
POWERHOUSE HEADWORKS
HEADGATES, HOISTS AND EMBEDDED PARTS"
will be received up to 4:30 o'clock p.m. Eastern Daylight Saving Time on
THURSDAY, JULY 14, 1955
for the design, manufacture, fabrication, shop testing, supply and delivery of 12, 24, 36 or 48 headgates, including hoists and embedded parts for the Canadian half of the powerhouse headworks.

Delivery is to commence February 1, 1956, and is to be completed by February 1, 1958.

Copies of the tendering documents may be obtained on or after June 13, 1955, at the office of the Director of Supply, Ontario Hydro, 620 University Avenue, Toronto 2, Ontario, on payment of $25.00 for each copy. This charge will not be refunded.

Tendering documents may be inspected at the above location and at the offices of the following: the Commission's Field Office, Cornwall, Ontario; Power Authority of the State of New York, 270 Broadway, New York 7, New York; and Uhl, Hall and Rich, 230 Congress Street, Boston 10, Massachusetts.

Each successful tenderer will be required to furnish a performance bond, in the form approved by the Commission, and issued by a bonding company licensed as such in the Province of Ontario and acceptable to the Commission for one hundred per cent (100%) of the total amount of its contract.

The lowest or any tender will not necessarily be accepted. E. B. EASSON
SECRETARY

Bids: July 7, 1955

New Jersey Turnpike Authority

ADVERTISEMENT FOR PROPOSALS
CONTRACTS NOS. PE-7A, PE-7B, PE-7C, PE-7D AND PE-7E

Sealed proposals are invited for Contracts Nos. PE-7A, PE-7B, PE-7C, PE-7D and PE-7E in connection with the utility buildings, toll islands and associated work for Interchange No. 6 for the Pennsylvania Extension, Burlington County, New Jersey, as follows:

Contract No. PE-7A—General Construction
Contract No. PE-7B—Structural Steel and Miscellaneous Iron Work
Contract No. PE-7C—Plumbing
Contract No. PE-7D—Heating and Ventilation
Contract No. PE-7E—Electrical

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock, Eastern Daylight Saving Time, on the morning of July 7, 1955, at which time and place said proposal will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after June 16, 1955, at the office of the Authority, and at the office of the Consulting Architects, Lorimer and Rose, 254 W. 54th Street, New York 19, New York. Contract documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

June 14, 1955

OFFICIAL PROPOSALS

Bids: July 12, 1955

Contracts 442, 443 and 445

MARGARETVILLE-ARKVILLE SEWAGE TREATMENT PLANT

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M., Eastern Daylight Saving Time (10:00 A.M., Eastern Standard Time), on Tuesday, July 12, 1955, for each of Contracts 442, 443 and 445 for the constructing and equipping of the Margaretville-Arkville Sewage Treatment Plant, located in the Town of Middletown, Delaware county, New York, all as set forth in the specifications, as follows:

CONTRACT 442, for the construction of the Margaretville-Arkville sewage treatment plant. The sewage treatment plant will consist of a control building, a digester building, two primary settling tanks, four sludge drying beds in a glass enclosure, a sludge lagoon, a filter dosing tank, six intermittent sand filter beds, a water supply system, an unsewered wastes tank, an outlet sewer and various equipment, systems of piping and other appurtenances required for the operation and control of the plant. The building superstructures will have brick walls with flat roofs of reinforced concrete slabs. The construction of an outfall sewer, 15 inches in diameter and about 1,720 feet long, and an access road, about 1,800 feet long with a paved width of 18 feet, are also included in the work of this contract.

CONTRACT 443, for furnishing, delivering, installing and testing heating, ventilating and appurtenant equipment. The heating system to be installed in the control building consists of a thermostatically controlled, oil-fired, low pressure steam system with one radiator and four propeller-fan type unit heaters. In the digester building the heating system consists of a thermostatically controlled, two zone, recirculating hot water system with two radiators and one propeller-fan type unit heater supplied by hot water generated by the sludge digester heater to be installed under Contract 442. The ventilating equipment to be installed includes nine stationary roof ventilators for the control building, digester building and water service pump chamber, four elbow type exhaust fans at the roofs of the control and digester buildings and a small exhaust fan in the water service pump chamber.

CONTRACT 445, for furnishing, installing and testing electric systems and miscellaneous electrical equipment, and caring for, installing and testing substation and control equipment furnished by The City.

Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., of each contract, can be obtained in Room 1317 at the above address, upon application in person or by mail, by depositing the sum of $5.00 in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of $4.00 will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings, for their own use may secure same, the cost thereof to be paid by them. For further particulars apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4453) will be received at Sargent, Nebraska, until July 20, 1955, for furnishing labor and materials for Earthwork and Structures for Laterals 6.0 through 20.0-0.9—Sargent Canal Laterals, Sargent Unit, Middle Loup Division, Missouri River Basin Project, Nebraska. Location near Sargent, Nebraska in Custer County. Principal items are 82,000 cu. yds. excavation; 720 cu. yds. concrete in structures; 3,100 lin. ft. furnishing and laying 15-, 18, 21-, and 24-inch diameter concrete culvert pipe; 2,650 lin. ft. furnishing and laying 18-, 21-, and 24-inch diameter HC50 concrete pressure pipe; and other work. Completion time 500 days. For particulars, address Bureau of Reclamation, P. O. Box 357, Sargent, Nebraska, or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: July 13, 1955

Massachusetts Turnpike Authority

NOTICE TO CONTRACTORS

Sealed proposals for Highway and Bridge Construction for a section of the Massachusetts Turnpike in the Town of West Springfield (CONTRACT NO. 51-195) will be received at the office of the Secretary-Treasurer, Massachusetts Turnpike Authority, Room 1059, 80 Boylston Street, Boston 16, Massachusetts until 11:00 A.M. of Wednesday, July 13, 1955, and immediately thereafter will be publicly opened and read in the Surrey Room on the lobby floor of the Hotel Touraine across the street from the Turnpike Authority's offices.

PROPOSAL GUARANTEE: $60,000
Charge for plans and proposal forms: $100.00, not refundable
Charge for printed copy of Standard Specifications: $10.00, not refundable.

Complete information at said office of the Authority; at office of General Consulting Engineer to Authority: Howard, Needles, Tammen & Bergendoff, Room 1146, 80 Boylston Street, Boston 16, Massachusetts, and at office of Section Engineer: Charles A. Maguire & Associates, 14 Court Square, Boston, Massachusetts.

Minimum wage and dump-truck rates have been established. Right reserved to waive any informality in or reject any or all proposals. An award will not be made to a Contractor who is not equipped to promptly undertake and complete the work.

By: WILLIAM F. CALLAHAN, Chairman
June 18, 1955

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Estimator, for firm doing extensive sewer, watermain, treatment plant, heavy construction. Must be graduate engineer or have extensive engineering background, with ability to obtain price and job information. Permanent position for qualified applicant. P-6074, Engineering News-Record.

Construction Foreman for firm engaged in extensive sewer, water main and treatment plant facilities. Permanent position in N. Y. State area. Only qualified applicants with broad experience. P-6595, Engineering News-Record.

Wanted: Instructor in engineering drawing and descriptive geometry. Salary $3600 for 9 month period. Dept. of Engr. Drawing, University of North Dakota, Grand Forks, North Dakota.

Civil Engineer: Public Works Engineering with progressive municipality 65,000 population. Salary $4560-$4860-$5160-$5460-$5760. Starting salary contingent on experience. Write Personnel, Municipal Building, Hamilton, Ohio.

Jr. Architectural Engineer—Prepare architectural plans and specifications for industrial buildings. Experienced or recent graduate considered. Also architectural draftsman—some experience preferred. Details to Personnel Division, H. J. Heinz Company, P. O. Box 57, Pittsburgh 30, Pa.

Estimator—Experienced, chemical, refinery and industrial installations. Age 35 to 40. Enclose picture, references, salary requirements and resume of experience. Los Angeles area. P-6587, Engineering New-Record.

Wanted: Asphalt plant superintendent for new high output plant permanently located and now operating in growing southern city. Must know asphalt mixes and have a good mechanical know-how. P-6649, Engineering News-Record.

Construction Supt; Civil Engineer graduate preferred for sewers, watermain, treatment plant work. P-6698, Engineering News-Record.

(Continued on following page)

CLASSIFIED **SEARCHLIGHT SECTION** ADVERTISING

EMPLOYMENT • BUSINESS • **OPPORTUNITIES** • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.80 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

POSITION WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

PROPOSALS, $1.80 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $20.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

EMPLOYMENT ADVERTISING:
New Employment Opportunities Section for Displayed ads starting July issue. For details see announcement ad in this section.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York Office, 330 W. 42nd St., N. Y., for June 30th issue closing June 20th

EXPERIENCED HIGHWAY CONSTRUCTION PERSONNEL

Large Nationally known Highway Construction Company, headquartering in Upper Midwest, with operations, branch offices and equipment yards located throughout the country, is looking for experienced engineer-estimator on highway construction. Preferably young man. Must be ambitious and willing to work. Considerable travel required.
Also several Top Grade Superintendents and General Foremen experienced in Highway Grading and/or Paving and Bridge Construction to work under regional or project managers. Good Salaries and future participation pension and Profit Sharing Plans and Stock Ownership for right men.

P-6623, Engineering News-Record, 330 W. 42 St., New York 36, N. Y.

EQUIPMENT DISTRIBUTORS AND DEALERS

We are looking for well-established manufacturers' agents, distributors and dealers who are in close contact with users of earth-moving equipment and have the time to devote to a profitable line of hard-surfacing alloys. Our company is one of the leading manufacturers in this field. There are several areas open for representation, distributor or dealer arrangement on an attractive basis. Write full details of your present products and territory coverage to

RW-6769, Engineering News Record
330 W. 42 St., New York 36, N. Y.

DEPUTY BUILDING INSPECTION SUPERVISOR: Graduation from an accredited four years college with degree in structural or architectural engineering. Seven years of experience in the structural design of buildings and some experience in examination of plans and specifications of building projects and applications for building permits. Salary $5772-$6812 per year.

ARCHITECT I: Graduation from a college or university of recognized standing with a degree in architecture and 2 years experience in architectural planning, design or drafting. Salary $4628-$5460 per year.

Complete details by writing to:

DIRECTOR OF PERSONNEL
Municipal Building, Hartford, Conn.

ESTIMATOR

Expanding Northern New York general construction corporation needs graduate engineer as estimator. Seeks young man with one or two years experience as estimator or engineer with two or three years field experience in building construction. Position now open. Give full resume; strictly confidential.

P-6711 Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT
(Continued from preceding page)

Young man, architectural or construction background, to promote building products for basic metal trade association. Salary $5,000 to $7,000 depending on qualifications. Headquarters NYC, some travel. P-6707, Engineering News-Record.

Petrographer: Experienced in mineralogical and petrographic examination of cement, concrete and concrete aggregates. Write fully regarding experience, education, date available and salary required. Midwest location. Permanent. P-6770, Engineering News-Record.

Architectural, Civil, electrical, mechanical, structural and traffic engineers are needed for expanding programs for either field or office assignments on a wide variety of municipal projects. Recent graduates start at $4613. Higher positions available depending on length and type of experience. For information write: Detroit Civil Service Commission, 612 City-County Building, Detroit 26, Michigan.

City Planners and Architects interested in city plan work are needed for intensified programs in neighborhood conservation and rehabilitation, transportation, central business district, and other special studies. Recent graduates start at $4613. Higher positions available depending on length and type of experience. For information write: Detroit Civil Service Commission, 612 City-County Building, Detroit 26, Michigan.

Construction executive, capable of managing and operating large building construction projects. Kindly submit work history and references. Salary will be discussed at interview. P-6803, Engineering News-Record.

Application Engineer for sales office of company manufacturing chlorination equipment of water and sewage treatment. This is a rapidly growing new division of an organization well established in the industrial instrument field. Excellent opportunity for ambitious man with sanitary engineering education and experience. Reply to P-6804, Engineering News-Record.

CONSTRUCTION EQUIPMENT ENGINEERS

Graduate engineers with minimum 5 years' experience designing, selecting, specifying and/or supervising operations of construction equipment such as crawlers, rubber-tired tractors, shovels, cranes, air compressors, welding machines, pumps, mixers, spreaders, fork lifts, etc.

To consult with manufacturers and suppliers on selection and modification of the above-mentioned equipment. For company's Equipment Engineering Division located in New York City. Salary good; liberal benefits.

Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 57
ARABIAN AMERICAN OIL COMPANY
505 Park Avenue, New York 22, New York

POSITIONS VACANT

Construction Engineer for general contractor on engineering projects. P-6699, Engineering News-Record.

Superintendent-Foreman — aggressive and thoroughly experienced in commercial and institutional building construction. Capable of organizing and directing complete projects. Excellent opportunity with a long established firm. Location Birmingham and North Alabama. P-6809, Engineering News-Record.

Experienced highway superintendent for New England area with a progressive company. Permanent position. Excellent opportunity for advancement. State qualifications, and starting salary desired. P-6841, Engineering News-Record.

Structural Steel detailing. Engineer wants partner with contacts in steel fabricating industry and detailing background. P-6808, Engineering News-Record.

Engineer—5-10 years experience in engineering construction and process design. Must be capable of directing all phases of engineering design and construction work in connection with ore dressing and chemical processing plants. Southwest USA. Salary open. P-6826, Engineering News-Record.

Construction Superintendent Experienced in heavy industrial construction, foundation work, buildings, and the setting of heavy industrial machinery and equipment. Write stating qualifications, previous employment, availability and references. Salary open, commensurate with experience and ability. Permanent position for qualified applicant. Location: South. P-6821, Engineering News-Record.

POSITIONS WANTED

Material Man—purchasing, expediting, receiving, storing. Tool rooms, warehouses. Age 58. 35 yrs. construction experience. PW-6621, Engineering News-Record.

(Continued on page 88)

THE AUSTIN COMPANY
Offers Opportunities to Qualified Engineers and Draftsmen

Positions are open to capable engineers and draftsmen who can design and/or prepare plans and specifications for complete industrial plants, all related structures, and building equipment falling within the following categories:

DESIGNERS—Office buildings, laboratories, and industrial buildings. Positions require those possessing vision and creativeness.

STRUCTURAL—Industrial buildings and miscellaneous structures of steel and reinforced concrete.

MECHANICAL—Heating, air conditioning, ventilation systems, process piping, conveying systems, plumbing, sewer, and sprinkler systems.

ELECTRICAL — Industrial lighting and power distribution and controls.

DETAILERS—Structural steel fabrication for industrial buildings.

Assignments are in connection with our long-established offices located on the East coast and Midwest areas. Desirable working condition, established vacation and sick leave plans, also paid holidays.

Full particulars as to education, experience, and compensation desired should be given in first letter.

NATIONAL HEADQUARTERS
16112 Euclid Ave. Cleveland 12, Ohio

HIGHWAY ENGINEERS

Designers, Detailers and Draftsmen for office work on highways and expressways. Long-term projects. Desire experience or training including alignment and profile computations, geometric design of interchanges and associated work.

Employee Benefit and Retirement Plan, paid vacations and holidays, sick leave. Modern, air conditioned offices in downtown St. Louis. Please write fully to or inquire at

SVERDRUP & PARCEL ENGINEERING CO.

1625 Eye Street, N. W.
Washington 6, D. C.

1134 Locust
St. Louis 1, Mo.

ENGINEERS — TECHNICIANS

Experienced in Concrete, Soils mechanics, Asphalt paving, Geology and Highway engineering. Also Cement and Asphalt Chemists.

LARGE INDUSTRIAL AND HIGHWAY PROJECTS

Long term employment and advancement opportunities, paid vacations, hospitalization and insurance.

Please submit complete resume of experience, education, earliest date available and salary requirements.

TOLEDO TESTING LABORATORY

1810 North 12th Street — Toledo 2, Ohio

POSITION VACANT
VILLAGE ENGINEER

For the Village of Trenton, Michigan
A growing city of a population of approximately 11,000
Make application by mail to:

VILLAGE CLERK
2872 W. Jefferson — Trenton, Michigan

ENGINEERS — ARCHITECTS
DESIGNERS
DRAFTSMEN — DETAILERS

Positions offer permanent employment opportunity with long established Consulting Engineering firm.

Good salaries, paid vacations, hospitalization, advancement on merit.

Openings in—Highways and Bridges, Industrial Buildings, Schools, Dams, Housing Developments, Sanitary Engineering.

Qualified men submit resume of experience, education, salary requirements, date available to:

GLACE AND GLACE, INC.
Consulting Engineers

1001 North Front Street — Harrisburg, Pennsylvania

STRUCTURAL ENGINEER

Structural steel designer and estimator for industrial buildings and miscellaneous steel structures. Applicant should be graduate engineer, preferably 35-45 years old, with a minimum of 5 years of actual structural steel design experience. Permanent employment with top pay, paid vacations, group insurance plan, pension plan. Excellent opportunity. Location is in Mid-West. Employer is nationally known, well established steel fabricator.

Reply fully, giving resume of experience, education, age and salary requirements to

P-6749, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ASSISTANT CHIEF ENGINEER
Guam Project

Experienced on large industrial type buildings and related utility projects. Graduate Engineer with at least 10 years' experience required.

Write, giving detailed account of experience, education, etc.

BROWN-PACIFIC-MAXON
"Guam" Contract NOy-13931
P. O. Box 3316, Rincon Annex
San Francisco "19"—Calif.

DESIGN ENGINEERS

Permanent opportunities for qualified engineers experienced in design of:

STRUCTURAL STEEL
REINFORCED CONCRETE
HEAVY MACHINES

Applicable to design of Blast Furnaces, Ore Beneficiation Plants and similar heavy structures

also

PIPING
DESIGN AND LAYOUT

Applicable to Oil Refinery and Petro-Chemical Plant design

TOP EARNINGS—PENSION PLAN
MANY OTHER BENEFITS

Please contact or write:

Edward A. Kolner
ARTHUR G. McKEE & CO.
2300 Chester Ave. Cleveland 1, Ohio

Attention . . .
EMPLOYMENT ADVERTISERS

Effective with the first July issue, a new section will start in ENGINEERING NEWS-RECORD. We will head this section: EMPLOYMENT OPPORTUNITIES. All Displayed Employment Opportunity advertising will be placed in this new section. with the exception of those advertisers who contract for run-of-book positions. New advertisers will be billed at the transient rate of $24.25 unless on contract. Contract rates furnished on request. Advertisements are subject to Agency Commission.

FABRICATED STRUCTURAL STEEL AND PLATE ESTIMATORS

Large Southern fabricator has openings for fabricated structural and/or plate estimators familiar with field erection costs. Preferably engineering graduates with two years practical experience. Forward resume with salary expected to:

P-6702, Engineering News-Record
330 West 42nd Street, New York 36, N. Y.
All replies will be confidential

POSITIONS WANTED
(Continued from page 86)

Construction Executive, available as project manager, on large operation, chief estimator for large organization or in other executive position where scope warrants employment of top man, thoroughly experienced on all types of construction and in every phase of general contracting. PW-6635, Engineering News-Record.

Supt. extensive experience on rock heavy blasting, open cuts shafts tunnels and earth moving. PW-6782, Engineering News-Record.

Civil Engineer, 27, BCE, MCE, completing 3 years commissioned service with U. S. Air Force in USAF Hospital construction. Last 1½ years on site as project officer for new 300/500 bed general hospital. Available 27 June. N. Y. area preferred. PW-6756, Engineering News-Record.

Engineering Draftsman, 7 years' experience municipal water filtration, sewage treatment plants, etc. Married, interested in relocating with consulting engineer. References. PW-6763, Engineering News-Record.

Construction Executive—Graduate C.E., 23 years experience, including job supervision, estimating, preparation and supervision of subcontracts. Also experience with consulting engineers. PW-6724, Engineering News-Record.

Construction Superintendent, or project manager. 25 years experience as a construction superintendent and project manager in heavy industrial construction. Especially experienced in oil refinery and chemical plant construction, as well as steel mill building, and government construction. Best references from previous employers, with excellent record of accomplishment. Available immediately. Reply to PW-6726, Engineering News-Record.

Construction Engineer—Reg. Prof. Engr. C.E. grad. 20 years construction experience 12 of which as supt. of construction. Know equipment, estimating, job pushing, cost control. Experience about 70% heavy 30% industrial. Age 41. PW-6737, Engineering News-Record.

Construction Supt.; over 25 years experience on schools, hospitals, industrial & commercial bldgs., sewage treatment plants & large scale housing. Registered engineer, available soon to progressive organization, requiring service of experienced man. PW-6802, Engineering News-Record.

Civil Engineer, 30, associate member ASCE 10 years varied construction experience languauges desires engineering sales or engineering contact position local or abroad willing to undergo training. PW-6805, Engineering News-Record.

Construction Superintendent—graduate C.E., experienced in the field with general contractors on large buildings & projects. Prefer Mid-West. PW-6811, Engineering News-Record.

Graduate Professional engineer and licensed surveyor desires position teaching civil engineering and related subjects. Ten years experience in design and construction for railroads, contractor and consulting firm. One year teaching experience. Reply PW-6810, Engineering News-Record.

Wanted job as field supt—have 28 years experience and am qualified for the job. PW-6796, Engineering News-Record.

Hydraulic and sanitary engineer; M.S.C.E.; registered P.E.; 30; single. Nine years comprehensive consulting engineering experience involving investigation, design, and construction of water supply, sewerage, and drainage facilities. Presently employed. Free to travel or relocate; U.S. or foreign locations. PW-6801, Engineering News-Record.

Retired engineer, technologist, seeks lines, as manufacturers agent, builders, architects. PW-6847, Engineering News-Record.

PART TIME WORK WANTED

Part Time work. Retired licensed structural engineer available for design, detailing and estimating. PTWW-6788, Engineering News-Record.

SELLING OPPORTUNITY WANTED

Manufacturers Agent seeks additional lines. Straight commission or jobbing basis. Excellent connections architects, contractors, eastern New York State. RA-6647, Engineering News-Record.

SPECIAL SERVICES

A group of professors and engineers will undertake the design of structural buildings, highway bridges, foundations, etc. Complete work with design sheets and construction drawings can be produced fast and economically with latest methods of design. Prefer subcontract on an hour basis or per drawing basis. SS-6673, Engineering News-Record.

BUSINESS OPPORTUNITIES

For Sale: Very active, fully equipped, surveying practice and architectural service, Southern Nassau County. Principals only. BO-6723, Engineering News-Record.

For Sale construction co. in central U. S. A. with supervision and new equipment to handle approx. $3,500,000 of work each year. Reason bad health. BO-6764, Engineering News-Record.

LEARN ESTIMATING
Complete Building Estimators Course, also Building Labor Calculator for practicing estimators. Thirty-fourth year serving the building industry. For free trial and all particulars write:
TAMBLYN SYSTEM
1420 Gilpin St. Denver 6, Colorado

Engineers—Foremen—Office Men
Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.
GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
411 So. 5th Ave. Lake Worth, Florida

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty third year
WILSON *Engineering Corp.*
College House Offices HARVARD SQ CAMBRIDGE MASS

FOR SALE—PUMPCRETE
Like New, Perfect Condition Rex 200D, Complete, Gas Powered—600'-8" Pipe, Spare Parts—Ready for Immediate Work
G. A. COONEY
2128 Hudson Chicago 14, Ill.
Financial 6-0456

SIERRA LOADER
1 Model C-30-1, Serial number 221 Sierra Loader. Actual hours operation 27. Machine located near Perrysburg, Ohio.
Price $18,000.00.
Badgett Mine Stripping Corporation
P. O. Box 152 Perrysburg, Ohio

SURVEYING INSTRUMENTS
USED • REBUILT • SALE
RENT • REPAIRING

expert repairs
or complete overhauling by skilled craftsmen on all makes and types. Precision guaranteed.
FINE RENTAL INSTRUMENTS
Reasonable rates, on monthly or yearly basis. All instruments guaranteed to be in first class condition.
David White COMPANY
319 W. Court St. Milwaukee 12, Wis.

For Sale
• DREDGES
• BUCKETS
• PUMPS
1—FAIRBANKS-MORSE 8" DIESEL DREDGE PORTABLE MODEL 41C, 30 D.W. DIRECT CONNECTED, DIESEL GENERATOR SET.
8-CUBIC YARD DIPPER DREDGE
16" HYDRAULIC STEEL HULL DIESEL DREDGE
24" DIESEL DREDGE NEW IN 1951
3½ CLAM SHELL BUCKET
12" DREDGE PUMP DIRECT CONNECTED TO 300 H.P. MOTOR
1—20" DREDGE PUMP
H. P. GUION
Dredge Broker
303 W. 42nd St., N. Y. C. 18, N. Y.

FOR SALE
SEVEN (7)
INTERNATIONAL TD-24's
All with P.C.U.'s—three (3) with Bulldozers, good operating condition, located Bay City, Texas.
Contact JAMES NOEL, Bay City
or
FRANTZ TRACTOR CO., Inc.
2740 Ewen Street, New York 63, New York

FOR SALE
TRUCK MIXER, 5½ cu. yd.
Jaeger Horizontal, 14 months old, powered Continental engine, ce-matic transmission.
PRICE $3,750.00
ANDERSON EQUIPMENT COMPANY
Box 1737 Pittsburgh 30, Penna.
Phone: LEhigh 1-6020

FOR SALE
2 MANITOWOC CRANES
Model 3000B,
diesel powered, 100' boom, 30' jib.
FORSYTHE EQUIPMENT CO. INC.
37-11 Vernon Blvd. Long Island City 1, N. Y.
Exeter 2-6125

Locomotives, 5 to 80 tons, diesel, elec., gas.
B-Monighan Walking draglines, 9, 7, 5W, 200W.
Whirley gantry cranes, American R-20, 10-125.
Shovels, cranes, draglines, 1½ to 14 yds.
Locomotive cranes, 25-40 tons, diesel, gas.
Smith-White 6-yd. truck-mixers, 1951 (9).
Euclids, Tournarockers, Athays, Dumptors.
Dump cars (105), 10-ton V type, 36" gauge.
International Paver batch trucks, dual (25).
H. Y. Smith Co., 828 N. B'way, Milw. 2, Wis.

44 Ton LOCOMOTIVE
PORTER 44-Ton 300 HP Diesel Electric Locomotive; new '43; excellent; two 150 HP Cummins Engines. Electrics are G.E. REASONABLE, TERMS.
EVEREADY
805 Housatonic Ave. Bridgeport, Conn.
EDison 4-9471.

If there is anything you want
that other readers can supply
OR . . . something you don't want—
that other readers can use—
Advertise it in the
SEARCHLIGHT SECTION

EUCLIDS

Use 13 yd. bottom dumps
Cummins & General Motors Powered
Located - Texas - Pa. - N. Y. State
Write, Wire or Phone
L. B. SMITH, INC.
Camp Hill, Penna.
***Tel:* Harrisburg, Regent 7-3431**

FOR SALE OR RENT—EASY TERMS
Rebuilt — A 1 Condition
48B Bucyrus Erie Shovel 2 cy Diesel
Caterpillar Auto Patrol No. 12
Caterpillar D8 Bulldozer
Caterpillar Scraper Model 80
3—Caterpillar DW 10's
WILLIAMS CONSTRUCTION COMPANY
Box 145 Balto. 20, Md. Murdock 6-6600

LOW COST INSTALLATION AND OPERATION

CABLEWAYS

IMMEDIATE SHIPMENT
ELECTRIC, STEAM OR DIESEL
CAPACITY 3 TO 20 TONS
SELL, RENT OR BUY

FOR DAMS BRIDGES BREAKWATERS FILTRATION AND SEWERAGE PLANTS

FOR SPEED ECONOMY EFFICIENCY FLOOD SAFETY LABOR REDUCTION

AMBURSEN DAM CO. INC.
295 MADISON AVE. NEW YORK

FOR SALE

5—LaPlante-Choate Motor Scrapers, Serial Nos. 259, 260, 261, 266 and 268	$12,000.00 ea.
2—Caterpillar D8 Tractors, Serial Nos. 8R-1318, 8R-7447, with LeTourneau Model LP Scrapers, 12 to 15 c.y.	12,000.00 ea.
1—Tournadozer Model C, GM Diesel, Torque Converter Serial No. 2789	12,000.00
1—D4 Front End Loader 1 year old	8,000.00
1—Hough Hmc Front End Loader, 4-Wheel Drive, 1 year old	7,750.00
1—22B Bucyrus-Erie Crane and Dragline	12,000.00
1—Littleford Steam Generator Mounted on Trailer, KWIK 3,000 gallon capacity	4,000.00
1—1D9 Diesel International Wheel Tractor with Front End Loader Attachment	2,250.00
1—International Vibro-Tamper, 1 year old	8,500.00

All of the above machines are in excellent condition

VILBRO EQUIPMENT COMPANY
233 North Avenue **Telephone: WEstfield 2-4400** **Westfield, N. J.**

DEPENDABLE USED MACHINES

Special:—Northwest No. 2 truck crane in good condition. Only $2250. Come see it!

Gradall excavator	Agricat with angledozer blade	Eagle cinder crusher
Lorain ½ yd. dragline	Jeep trencher with bulldozer	40' bucket elevator
Byers ½ yd. shovel	Universal 800 Diesel gravel plant	16x16 roll crusher
20 ton lowboy	Pioneer port. 40x22 roll crusher plant	Mesabi 4x16 screen
trailer road broom	Cedar Rapids 30x18 roll crusher	3000 lb. frost ball

For rent,—Cranes, truck cranes, buckets, frost balls, floats and other accessories.

10002 Southwest Highway **TRACTOR & EQUIPMENT CO.** **Oak Lawn, Ill.**

FOR SALE

2—120 Ton Concrete Batch Plants
1—Rock Crushing Plant w/2 Crushers
2—34E Dual Drum Concrete Pavers
10—Truck Semi's w/boftom dump trailers, also end dump semi's
5—Model 25FD End Dump Euclids
2—Buckeye Trenchers—Models 48 & 224
1—Wood Roadmixer w/D-8 p.t.o.

UKROPINA-POLICH-KRAL
Box 105 San Gabriel, Calif.
CUmberland 3-3728

For Sale

PAGE DRAGLINE MODEL 621

SPECIAL 150 FOOT BOOM WITH TWO EIGHT YARD BUCKETS—LOCATED ON WATER OR RAIL

EUCLID-MEMPHIS SALES, INC.
185 E. Butler Ave. Memphis, Tenn.
***PHONE:* 8-0491**

NEW IN 1952

BARBER-GREENE 705B DITCHER

Backfiller Blade **Pneumatic Tires**
SPECIAL PRICE
New Machine Guarantee

EDWARD EHRBAR, Inc.
29 Meserole Avenue, Brooklyn, N. Y.
EV 3-5000

FOR SALE

STEEL STIFF LEG DERRICK

75 ft. Boom, 3 Drum Buffalo hoist, 75 H.P. Motor, Derrick house and complete electrical controls.

Price—$4,500
for quick sale

ACORN IRON & SUPPLY CO.
915 N. Delaware Avenue
Philadelphia 23, Pa.
Phone—WAlnut 2-7070

SHOVEL - DOZER - DRILL

Lima 34 Paymaster 1 yard diesel shovel

D-8 Caterpillar Tractor with LeTourneau angle dozer blade

Reich Truck mounted Rotary Air Drill

FRANK SWABB EQUIPMENT CO., INC.
313 Hazelton Nat'l. Bank Bldg.
Hazleton, Pa. GLadstone 5-3658

FOR SALE

2—Model "MC-416" Lorain 6x6 Moto-Cranes, Serial Nos. 15304 & 17066 with 80' Boom & Crane Block. Equipped as Crane, Clam and Drag. Price each f.o.b. St. Louis $17,000.00

RENTAL EQUIPMENT CO.
5515 Bulwer Ave. St. Louis, Mo.
Telephone — Evergreen 5-8775

FOR RENT OR SALE
2- Size S-8 McKiernan-Terry
STEAM PILE HAMMERS

CONTRACTORS MACHINERY CO.
2645 Southwest Blvd., Kansas City 8, Mo.
Valentine 4740

---

36 TANK CARS TANKS
10,000 & 8000 GAL. CAP.—WITH OR WITHOUT HEATING COILS
Shipment N. J.—Ill.—Ark.—Kan.
LESTAN CORP.
Rosemont, Penna.

FOR SALE

1—¾ yd. Shovel Front Only—New (For Lorain 41)
1—¾ yd. Lorain Shovel Model 41—Gas 3 Way Combination. Recently Rebuilt.
1—2 yd. Lorain Shovel Model 820—Rebuilt.
1—10 Ton 3 Wheel Buffalo Roller—Completely Rebuilt.
1—2 yd. 3000B Manitowoc Shovel—Good Condition.
2—2 yd. 44B Bucyrus-Erie Shovels.
2—AD 3 Allis Chalmers Graders

FOR SALE OR RENT

2—27FD End Dump Euclids—Good Condition, Practically New Rubber.
3—Model 80D Euclids—1952—Excellent Condition.

TUCKAHOE CONSTRUCTION CO., INC.
116 Columbus Avenue Tuckahoe 7, N. Y.

FAIRLEADS

For
MANITOWOC Models 2000-3000-3500
Also, Complete Dragline Attachments including booms, lagging, etc.

ANDERSON EQUIPMENT CO.
Box 1737, Pittsburgh 30, Penna.
Phone: LEhigh 1-6020

TOWERS—FOR SALE

9—Jaeger Self-Rising Towers, 37' high with 17 H.P. Gaso Hoist, Platform & Safety

PRICE $450.00 EACH

ABERTHAW COMPANY
133 Southampton St., Boston 18, Mass.
Phone Highlands 5-6700

FOR SALE

New and Used material—Immediate delivery from stock Angles, Channels, I and WF Beams, especially for Contractors needs

H BEAMS

50 pcs	10" B P S	42#	48/60'
46 "	10" B P S	57#	40/67'6"
60 "	12" B P S	53#	60'
63 "	14" B P S	73#	60/73'

PILE SECTIONS

Phone or Wire your steel requirements

We are also interested in purchasing your surplus material.

We assure you our prices will be the best obtainable.

HY DRACHMAN STEEL CORP.

Warehouse
1423 34th Avenue, Astoria, New York
AStoria 8-4484 8-8023

Sales Office
563 East Tremont Ave., New York City, N. Y.
CYpress 9-5440

CRANES FOR RENT

CRAWLERS — Capacities to 60 tons, Booms to 180 ft.

TRUCK CRANES — Capacities to 35 tons, Booms to 130 ft.

P and H. Lima and Manitowoc.

Top-Condition erection cranes

ROGER SHERMAN

CRANE SERVICE, INC.

East Hartford, Connecticut JAckson 8-4106

PILING

SURPLUS NEW and USED **For Sale or Rent**

LOCOMOTIVES

1—Plymouth 8 Ton 36" Ga. #4131.
1—Plymouth 8 Ton Gas, Std. Ga. #4095.
2—Plymouth 25 T.—36" Ga.—Diesels.
1—Brookville 3 Ton—Gas—24" Ga.—#3402.
2—Conway Mod. 75 Muckers, #256 & #305.
1—G.E. 25 T—36" Ga.—Diesel-Electric.
Bridgeford Axle Lathe.
2—50 Ton Twin Hopper Cars.
1—Whiting Type B 35 Ton—Pit Drop Table—New.
1—Southwark 100 Ton Hydraulic Press.
Birdsboro 400 Ton Wheel Press.

2—Industrial #7, 30 Ton—Diesel Loco. Cranes #11359 & 11412. Excellent.
1—Burro Model #15—Like New—Bargain.

R. H. BOYER
2005-13 W. Bellevue St. Philadelphia 40, Pa.
Phone Sagamore 2-7132

STEEL SHEET PILING

600—Pcs. M-116 in 40 to 60'—Chicago
130—Pcs. M-115 in 50 to 60'—Chicago
140—Pcs. M-112 in 60' —Chicago
300—Pcs. M-116 in 50 to 60'—Kansas City
100—Pcs. M-115 in 50' —Kansas City
105—Pcs. M-112 in 60' —Kansas City
83—Pcs. M-112 in 25 to 50'—North Dakota
100—Pcs. I-23 in 12 to 16'—Illinois
86—Pcs. M-116 in 29 to 30'—Southern Illinois
49—Pcs. I-22 in 30' —Wisconsin

Available for Prompt Shipment
Other Lots at Various Locations

CONTRACTORS MACHINERY CO.
Phone VAlentine 4740 — 2637 SOUTHWEST BLVD KANSAS CITY 8 MO

We do a Nation-Wide business in

STEEL SHEET PILING

IMMEDIATE SHIPMENT

685 pcs. 68-39 ft. Carn. MP-101—West Coast
396 pcs. 60-50 ft. M-116 & M-115—Illinois
400 pcs. 60-30 ft. Beth. DP-2—New York
504 pcs. 60 ft. M115, M112, M116—Kansas City
80 pcs. 50 & 40 ft. Carn. M-112—N. Dakota
86 pcs. 40 ft. Carn. M-116—S. Carolina
130 pcs. 30 ft. Carn. M-115, Ohio.

Other Lengths & Sections at Various Locations

PILE DRIVING EQUIPMENT

Vulcan and McKiernan-Terry Steam Pile Hammers and Extractors Hoists and Boilers

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St., Chestnut 1-4474, St. Louis, Mo.

FOR SALE

1—Bay City Model 65 (1 Yard) Crawler Shovel Crane Serial No. 5037. Cummings—H-6 Diesel power. Equipped with two shovel fronts and 70-foot boom. Excellent condition. **Price $20,000.00**

1—P & H. Model 855 Crawler Shovel Crane. Serial No. 10984. Powered by GM 671 Diesel. Equipped with shovel front and 90-foot boom. Excellent condition. **Price $32,000.00.**

1—Lorain Model 820 Crawler Crane. Serial No. 18221. Powered by Caterpillar D 13000 Engine and 90-foot boom. Excellent condition. **Price $30,000.00**

The above equipment is available and ready to work immediately.

E. & E. J. PFOTZER, Inc.
P. O. Box 126 Wilmington, Delaware

RENT STEEL SHEET PILING

Get the exact lengths and sections you need from Foster—all standard makes, delivered *on time*—and at Foster's standard low rental rates. Also Rental Pile Hammers & Extractors.

L B FOSTER co.
PITTSBURGH 30 • NEW YORK 7 • CHICAGO 4
HOUSTON 2 • LOS ANGELES 5

STEEL SHEET PILING
BOUGHT, SOLD, RENTED

270 Pcs. DP 2-46' & 150 pcs DP 1-45' Fla.
1800 Pcs. Beth. DP-2 & AP3, 60, 55, 50, 45, 40 35, 20 & 15 ft. in N. J., Ohio, Va., N. Y., Penna. & Ga.
20—Beth FT40 & FT 41 Tees 40' to 60'

CONSTR. EQUIPMENT

12—125, 80, 65, 44 & 25 Ton G.E. Diesel Elec. Locomotives. Also 10 & 16 Ton Plymouth
25 Ton Dobbie Stiff Leg Derrick 60/104' Boom.
12 Elmco 40, 21 & 12 B Muckers.
54"x24" Pioneer Crushing Rolls.
25 Ton Amer. Diesel Loco. Crane.
90 H.P.—125 Lb. Cyclotherm Package Boiler.
48 x 60 Traylor Jaw Crusher.
5'x12', 8'x12' & 6'x12' Marcy Rod Mill.
5'x12' Wemco HMS—No. 1 Mobile Mill.
15 Ton 60 Ft. Boom Diesel Whirley Crane.
10,000 Ft. New & Used 42 in. Conveyor Belt.
2500 New 42 in. Conveyor Idlers.
900 Ft. Link Belt 42 in. Belt Conveyor.
7-410, 676, 1578; 2200' I.R. Elec Compressors.
125-1½ & 2 yd. Cop Tunnel Cars
15—Battery & Trolley Locomotives 2 to 14 ton.

STANHOPE, 60 E. 42nd St., N. Y. 17, N. Y.

BOOMS

Crane & Dragline

For
MANITOWOC Models 2000—3000—3500
ANDERSON EQUIPMENT CO.
Box 1737, Pittsburgh 30, Pa.
Phone: LEhigh 1-6020

PIPE

Surplus New & Used

For Sale or Rent

FOR SALE

STEEL SHEET PILING

AT CHIEF JOSEPH, WASHINGTON

Shipped New—Used Only One Job

CARNEGIE Length	MP-101 Pcs.	MP-102 Pcs.	TEES Pcs.
72-65 ft.	105	100	2
65-60 ft.	210	50	9
60-50 ft.	210	5	18
50-45 ft.	290	2	7
45-40 ft.	120	1	13

Also quantity shorter than 40 ft.—Quick shipment regardless of job location, write, wire or phone.

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St., CHestnut 4474, St. Louis 1, Mo.

STEEL SHEET PILING—GEORGIA

RENT OR SALE

94 pcs DP-2 in 47 to 52 ft.
86 pcs M-116 in 48 to 51 ft.
Immediate shipment from Woodbine, Ga.

CONTRACTORS MACHINERY COMPANY
2645 Southwest Blvd. Kansas City 8, Mo.
VAlentine 4740

EST. 1904

DAVIDSON

PIPE COMPANY INC.

One Of The Largest Stocks In The East
Seamless and Welded ⅛" to 28" O.D. All wall thickness Manufactured. Specialty large sizes. Cutting — Threading — Flanging — Fittings — Valves.

Call GEdney 9-6300
50th St. & 2nd Ave., B'klyn 32, N. Y.

GREENHEART

Piling Timber and Lumber

Specified for heavy-duty marine Construction by U. S. Navy, Corps of Engineers, Coast Guard.

GREENHEART (Demerara) Inc.
52 Vanderbilt Ave., New York MU 6-0410

GLOBE PIPE & FITTING CO.

VALVES FITTINGS NEW **PIPE** USED FOR ALL PURPOSES

785 Metropolitan Ave., Brooklyn 11, N. Y.
EVergreen 7-6220

PILE DRIVING EQUIPMENT

Vulcan and McKiernan-Terry
Steam Pile Hammers and Extractors
Drop Hammers - Driving Caps
Steel Leads - Pile Driver Hose
Hoists and Boilers

CONTRACTORS MACHINERY CO.
Phone VAlentine 4740 — 2637 SOUTHWEST BLVD KANSAS CITY 8, MO

COMPLETE CONCRETE PLANT
FOR SALE

IMMEDIATE DELIVERY — PRICED RIGHT
EXCELLENT CONDITION THROUGHOUT
! ! READY FOR YOUR JOB ***NOW ! !***

1—used C. S. Johnson concrete plant with: 135 cy bin for 4 aggregates & 1 cement; 750 bbl cement silo; 275 b.p.h. 69' 8" cement elevator; 10" x 23' 10" undertrack screw; 1,000 lb semi-automatic water batcher admix batcher; 2 yd concentric batcher; accumulative scales; complete all respects.

1—used Smith 56S two yard concrete tilting mixer

1—used BlawKnox 600-650 bbl. cement silo with undertrack screw and elevator

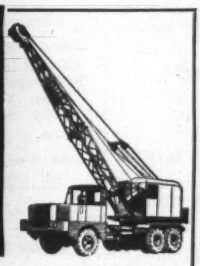
1—used Barber Greene 18" x 160' conveyor w/motor & belt

This equipment represents outstanding values in every way. We will sell the concrete plant separately, or any one of these four items separately. All loaded!

Write—Wire—Call **AL J. GOODMAN** *Dealer in Used Contractors' Equipment*
P. O. Box 263 *Office 36456* *Nites 5668* Asheville, N. C.

FOR SALE
BUCYRUS-ERIE
MODEL 38B SHOVEL POWERED BY
Practically new Caterpillar D-13000 Diesel Engine. Excellent condition.
McClung-Logan Equipment Co., Inc.
4601 Washington Blvd. Baltimore 27, Md.
Telephone Arbutus 3900

CRANE RENTALS
19
LORAIN
MOTO CRANES



- 10-45 ton capacities
- 15'-150' booms . . . all attachments and buckets
- complete with experienced operators
- go anywhere . . . coast to coast
- rent "Mighty Mo" . . . the world's largest crane on tires
- rental rates on request

MOTO-CRANE SERVICE, INC.
53 West Seven Mile Rd.
Detroit 3, Mich. FOrest 6-1017
15 years of experience

USED BARBER-GREENE 848 HOT ASPHALT PLANT

Capacity 110 to 120 tons per hour
consisting of

Mixer Unit Serial 848-4-27 equipped with GMC diesel motor which was new Nov. 1953.
Hot Elevator between Gradation Unit and Mixer.
Gradation Control Unit with Simplicity Screen.
Hot Elevator, dryer to Gradation Unit, 64 buckets, with Ford 6-cylinder motor.
Dual Drum Dryer Model 830G, with one new drum installed June, 1953, and new Cummins diesel motor August, 1952.
Cold Elevator, 62 buckets.
2 Aggregate Feeder.
Dust Collector and Pipe, shop built, with LeRoi Motor and Clarage Fan.
This plant located Wellington, Kansas, has been well maintained by responsible people and is ready for service. Immediately available. Price, loaded on cars or trucks.....$32,500.00

THE G. W. VAN KEPPEL COMPANY
2461 Pennway Kansas City 8, Mo.
Grand 1540

FOR SALE

Two (2) 500cfm Chicago Pneumatic Compressors s/n 49417 and 49607 both powered with D-13000 Caterpillar Diesel Engines—Condition—Excellent.

One (1) Buckeye Finegrader Model FG-13 s/n 519 powered by Hercules gasoline engine. Capacity—12 to 14 feet only. Condition—Good.

One (1) 3 Cu. Yd. Garwood Scraper Model 23 s/n 23-221 Condition—Excellent.

One (1) Pettibone Mulliken Speed Loader—Model 56 s/n SL-475 powered by 8 cyl. Chrysler Industrial Engine Type IND 12A-310 s/n 28831. Machine is self propelled and has a capacity of 5-8 cu. yds. of loose material per minute. Has complete windrow loading attachment plus a loading belt which will swivel 170 degrees. Newly overhauled and not used since.

UNION BUILDING & EQUIPMENT CO.
631 Main Ave. Passaic, N. J.

RAILS-TIES
TRACK ACCESSORIES
NEW and RELAYING

FOR SALE
MARION MODEL 93M DRAGLINE.
with 70 ft. boom & Cat D-17000 Engine.
Serial Number 9280. Purchased new in 1949. New Carbody installed in 1952. Can be inspected in Richmond. Is at present working on job. Will be available July 1.
RISH EQUIPMENT CO., RICHMOND, VA.
Telephone 3-3538

SHOVEL
NEW GUARANTY
¾ Yd. Unit with G-M Diesel Engine
Will Rent or Sell
ANDERSON EQUIPMENT CO.
Box 1737, Pittsburgh 30, Pa.
Phone: LEhigh 1-6020

RAILROAD Cross and Switch TIES
Promptly from adequate stocks
NEW and USED ***(as available)***
GILLIS & COMPANY
29 East Madison St. Chicago 2

USED EUC LOADERS

Do you have a job that calls for a high capacity dirt loader? Then this is your machine. It's a Euclid 5BV—able to load 25 cubic yds. a minute. Our service men have put in every single repair necessary to give you fresh-from-the-assembly-line quality. More than a hundred new parts, including new cutting edges, were installed. Completely backed by our exclusive Bond of Satisfaction. Call, wire or write us today.

This loader as well as many other used equipment bargains are listed in each issue of SCOOP, the used equipment publication. Write for your free subscriptions today.

OHIO MACHINERY CO.
Dept. E,
6606 Schaaf Rd., Cleveland 9, Ohio.

RAILS
NEW — RELAYING — TRACK ACCESSORIES
MIDWEST STEEL CORP.
502 DRYDEN STREET
CHARLESTON, W. VA.
IMMEDIATE DELIVERY

FOR SALE
DIESEL ELECTRIC LOCOMOTIVES
STANDARD GAUGE
25 - 44 - 45 - 65 - 75 tons
and
5—G.E. 125 ton—1000 HP
Write for Details
FRANK M. JUDGE & CO., INC.
7010 Empire State Building
New York 1, N. Y.

PROFESSIONAL SERVICES

Cards arranged by areas, states, cities, names

Additional cards on following pages

NEW ENGLAND

Engineering Services Inc.

Foundation Investigations.
Soil Testing & Test Borings
Minerals Exploratory Service

119 New London Tnpk. Glastonbury, Conn.

Goodkind & O'Dea

Consulting Engineers

Design and Supervision
Foundations, Structures, Highways

1214 Dixwell Ave. Hamden, Conn.
125 Church St. Malverne, N. Y.
29 Lackawanna Pl. Bloomfield, N. J.

Genovese & Shumavon

Consulting and Designing Engineers

Expressways, Parkways, Highways
Topographic and Highway Surveys
Airports, Bridges, Beach Developments
Design and Supervision of Construction
294 Elm Street 67 West 44 Street
New Haven, Conn. New York 36, N. Y.

Fay, Spofford & Thorndike

Engineers

John Ayer Ralph W. Horne
Bion A. Bowman William L. Hyland
Carroll A. Farwell Frank L. Lincoln
Howard J. Williams
Members, American Society of Civil Engineers

Airports, Bridges, Turnpikes
Water Supply, Sewerage and Drainage
Port and Terminal Works
Industrial Buildings

Designs Investigations
Supervision of Construction
Boston New York

Jackson & Moreland

Engineers and Consultants

Design and Supervision of Construction
Reports—Examinations—Appraisals
Machine Design—Technical Publications
Boston New York

Chas. T. Main, Inc.

Engineers

Design and Supervision of Construction for Industrial Plants
Electrical, Steam and Hydraulic Engineering
Investigations, Reports and Appraisals
Chamber of Commerce Bldg.
80 Federal St., Boston, Mass.

Metcalf & Eddy

ENGINEERS

Investigations Reports Design
Supervision of Construction and Operation
Management Valuation Laboratory
1300 Statler Building, Boston 16

Thomas Worcester Inc.

Engineering—Architecture
Construction Management

Highways and Bridges
Waterfront Facilities
Industrial Developments
Structures of all Types
85 State St. Boston 9, Mass.

C. W. Riva Co.

Engineers

Edgar P. Snow Robert C. Barker
John F. Westman John H. Grass

Highways, Bridges, Tunnels, Airports, Foundations, Sewerage, Water Supply.

511 Westminster St., Providence 3, R.I.

MIDDLE ATLANTIC

Airways Engineering Corp.

Airports, highways, dams, fuel storage, pipe lines, aerial topographic mapping.
1212 - 18th St., N.W.,
Washington 6, D. C.
Phone: REpublic 7-8121.

Alster & Associates, Inc.

Photogrammetric Engineers

Topographic Mapping, Planning, Surveying, Map Consultants, Photo Mosaics.
6135 Kansas Ave., N. E.
Washington 11, D. C.
Phone: Taylor 9-1167

Green Associates, Inc.

Consulting Engineers

Civil, Mechanical, Electrical

Baltimore, Md., Pittsburgh, Pa.

Whitman, Requardt & Associates

Engineers—Consultants

Civil—Sanitary—Structural
Mechanical—Electrical

Reports, Plans, Supervision, Appraisals
1304 St. Paul St., Baltimore 2, Md.

Oscar Sutermeister

Consultant on Defense Planning

Surveys, plans, reports for defense industry and target cities on: Evacuation-Shelter-Fallout Cover-Reduction of Vulnerability.

5923 Johnson Ave. Bethesda 14, Md.

Berger Associates

Consulting Engineers

Studies, Design and Supervision
Expressways — Airfields
Structures — Foundations
Soil Investigations — Borings
East Orange — New Jersey
Harrisburg — Pennsylvania

Greer & McClelland

Consulting Foundation Engineers

SOIL INVESTIGATIONS

Borings
Laboratory Tests
Foundation Designs & Analyses
Reports

98 Greenwood Ave. Montclair, N. J.
2649 N. Main St. Houston, Texas

Edwards, Kelcey & Beck

Consulting Engineers

Reports, Design Supervision
Subways, Expressways, Traffic, Parking
Harbor Works, Bridges, Tunnels
Housing and Industrial Developments

Newark, New Jersey
New York Philadelphia Boston

Porter, Urquhart, McCreary & O'Brien

O. J. Porter & Co. *Consulting Engineers*
Airports-Highways-Dams-Structures
Foundations-Stabilization-Pavements
415 Frelinghuysen Ave., Newark 5, N.J.
625 Eighth Avenue, New York 18, N. Y.
3568 W. Third St., Los Angeles 5, Calif.
516 Ninth St., Sacramento 14, Calif.

Frank E. Harley and Associates

Consulting Engineers

Design, Surveys, Plans and Construction Highways, Sewerage and Sewage Treatment, Water Supply and Purification, Municipal Problems.
Harley Bldg., 260 Godwin, Wyckoff, N. J.

B. K. Hough

Consulting Engineer
Soils & Foundation Engineering

Site investigations, soil testing, design analysis for earthworks, foundations and pavements, field inspection, engineering reports, consultation.
121 E. Seneca St., Ithaca, New York

Ammann & Whitney

Consulting Engineers

Design — Construction Supervision
Bridges, Highways, Expressways, Buildings, Special Structures, Airport Facilities
76 Ninth Avenue, New York 11, N. Y.
724 E Mason Street, Milwaukee 2, Wis.

Barker & Wheeler

Water Supply — Utility and Industrial
Sewerage — Valuations
Sewage Disposal — Reports
Power Systems
New York City, 11 Park Place
Albany, N. Y. 36 State St.

Barstow & Mulligan

Consulting Engineers

Movable & Long Span Bridges
Prestressed Structures

112 W. 42 Street New York 36, N. Y.

Bogert and Childs

Consulting Engineers

Clinton L. Bogert Fred S. Childs
Ivan L. Bogert Donald M. Ditmars
Robert A. Lincoln Charles A. Manganaro
William Martin

Water & Sewage Works Refuse Disposal
Drainage Flood Control
Highways & Bridges Airfields
624 Madison Avenue, New York 22, N.Y.

Bowe, Albertson & Associates

Engineers

Water and Sewage Works—Industrial Wastes—Refuse Disposal—Municipal Projects—Airfields—Industrial Buildings—Reports—Designs—Estimates—Valuations—Laboratory Service.

110 William St., New York 7, N. Y.

Brown & Blauvelt

CONSULTING ENGINEERS

Expressways, Highways, Parkways
Airports, Bridges, Dams, Water Supply

Industrial and Chemical Plants
Sewage Disposal

Preliminary Reports, Engineering Design, Construction Supervision

488 Fourth Ave., New York 16, N. Y.

Buck, Seifert & Jost

Consulting Engineers
(formerly Nicholas S. Hill Associates)

Water Supply — Sewage — Hydraulic Developments, Reports and Valuations.
Chemical and Biological Laboratories.
New York City, 112 E. 19th St.

Builders Estimating Service, Inc.

Cost Estimates
Quantity Surveys
Material Purchase Lists

140 Nassau St., New York 38, N. Y.
COrtlandt 7-0322.

Cotton, Pierce, Streander, Inc.

Associated Engineering Consultants

Water Supply, Treatment, Distribution
Sewage, Sewage Treatment
Refuse Disposal, Trade Wastes
Power Plants
Reports, Plans, Supervision

132 Nassau St., New York, N. Y.
PO Box 198, Hyde Park 36, Mass.
1405 W. Erie Ave., Phila. 40, Pa.
55 Caroline Rd., Gowanda, N. Y.

Ebasco Services Inc.

ENGINEERS
CONSTRUCTORS
BUSINESS CONSULTANTS

Design and Construction
Financial and Operating Consultation
Investigations and Reports
Consulting Engineering

Two Rector Street New York
209 S. LaSalle Street Chic. 4, Ill.
204 Southland Life Bldg. Dallas 1, Texas
611 Equitable Bldg. Portland 4, Ore.
1625 Eye Street, N.W. Wash. 4, D. C.

The Giles Drilling Corporation

Engineering Geology Reports
Foundation Investigations
Soil Testing & Test Borings

2 Park Ave New York 16, N. Y.

Hardesty & Hanover

Consulting Engineers

Bridges
Long Spans of All Types
Movable—Lift, Bascule and Swing
Hanover Skew Bascule
Steel and Concrete Spans
Grade Crossing Eliminations

Expressways and Thruways
Other Structures
Foundations
Supervision, Reports, Appraisals

101 Park Avenue, New York 17, N. Y.

Frederic R. Harris, Inc.

CONSULTING ENGINEERS

F. H. Dechant, E. J. Quirin,
E. H. Harlow

Harbors, Piers & Bulkheads, Drydocks.
Foundations, Soil Mechanics.
Sanitary & Industrial Waste Disposal.
Water Supply, Flood Control.
Airports, Highways, Bridges.
Power, Industrial Plants, Buildings.

27 William Street New York
3 William Street Newark
Fidelity Phila. Trust Bldg. Philadelphia

Hazen & Sawyer

Engineers

Richard Hazen Alfred W. Sawyer

Water and Sewage Works,
Industrial Waste Disposal,
Drainage
Reports, Designs, Supervision of Construction and Operation
122 East 42nd St., New York 17, N. Y.

Howard, Needles, Tammen & Bergendoff

Consulting Engineers
Bridges and Structures
New York, N. Y., 55 Liberty St.
Kansas City, Mo., 1805 Grand Ave.

Knappen-Tippetts-Abbett-McCarthy

Engineers

Ports, Harbors, Flood Control, Power, Dams, Bridges, Tunnels, Highways, Subways, Airports, Traffic, Foundations, Water Supply, Sewerage, Reports, Design, Supervision, Consultation.

62 West 47th Street, New York City

Moran, Proctor Mueser & Rutledge

Consulting Engineer

Foundations for Buildings, Bridges and Dams; Tunnels, Bulkheads, Marine Structures; Soil Studies and Tests; Reports, design and supervision.

New York 17, N. Y. 420 Lexington Ave.

PARDO, PROCTOR, FREEMAN & MUESER
Ap. Correo 614 Caracas, Venezuela

Parsons, Brinckerhoff Hall & Macdonald

ENGINEERS

Bridges, Highways, Tunnels, Airports, Subways, Harbor Works, Dams, Canals, Traffic, Parking and Transportation Reports, Power, Industrial Buildings, Housing, Sewerage and Water Supply.

51 Broadway, New York 6, N. Y.

E. Lionel Pavlo

Consulting Engineer

Design, Supervision, Reports
Bridges, Highways, Expressways
Marine Structures, Public Works
Industrial Construction, Airports

7 E. 47th St. New York 17, N. Y.

Malcolm Pirnie Engineers

Malcolm Pirnie Ernest W. Whitlock
Robert D. Mitchell Carl A. Arenander
Malcolm Pirnie, Jr.

MUNICIPAL & INDUSTRIAL
Water Supply - Water Treatment
Sewage and Waste Treatment
Drainage - Sewerage - Refuse Disposal

25 West 43rd St., New York 36, N. Y.

PROFESSIONAL SERVICES

Cards arranged by areas, states, cities, names — Additional cards on preceding and following pages

The Pitometer Associates

Engineers

Water Waste Surveys
Trunk Main Surveys
Water Distribution Studies
Water Measurements & Special Hydraulic Investigations

New York, 50 Church St.

Alexander Potter Associates

Consulting Engineers

Water Works, Sewerage, Industrial Waste, Hydraulic Works, Reports, Designs, Appraisals.

50 Church St., New York, N. Y.

Clyde Potts Assoc.

Weston Gavett - Stanley N. Williams

Consulting Sanitary Engineers

Sewerage and Sewage Disposal
Water Works and Water Supply
Valuations and Appraisals

30 Church Street, New York 7

Sanderson & Porter

Engineers and Constructors

Reports and Surveys

New York, New York

Seelye Stevenson Value & Knecht *Consulting Engineers*

Richard E. Dougherty, Consultant

Airports, Highways, Bridges, Dams, Water Supply, Sanitation, Railroads, Piers, Industrial Plants, Reinforced Concrete, Steel, Industrial Waste Disposal, Foundations, Soil Studies, Real Estate Development

Civil — Mechanical — Electrical

101 Park Avenue New York 17, N. Y.

Scheidenhelm, F. W.

Consulting Engineer

Hydraulic Engineering; Hydro-electric Development; Water Supply; Flood Control; Engineering Problems relating to Water Rights and Water Power Law; Appraisals. 50 Church Street, New York 7, N. Y.

Severud-Elstad-Krueger

Consulting Engineers

Structural Design - Supervision
Reports - Buildings - Airports
Special Structures

415 Lexington Avenue
New York 17, N. Y.

Singstad & Baillie

Consulting Engineers

Ole Singstad David G. Baillie, Jr.

Tunnels, Subways, Highways
Foundations, Parking Garages

24 State St. New York 4, N. Y.

Frederick Snare Corporation

Engineers—Contractors

Harbor Works, Bridges, Power Plants, Dams, Docks and Terminals.
Difficult and Unusual Foundations A Specialty.

233 Broadway, New York City 7

Havana, Cuba Lima, Peru
Bogota, Colombia, Caracas, Venezuela, San Juan, Puerto Rico, Guayoquil, Ecuador.

When you need a SPECIALIST in a hurry . . .

Engineering News - Record's Professional Service Section offers the quickest, most direct method of contacting consultants who may be available NOW.

D. B. Steinman

Consulting Engineer

BRIDGES

Design, Construction
Strengthening, Investigations.
Reports, Advisory Service

117 Liberty St., New York 6, N. Y.

Henry W. Taylor

Consulting Engineer

Water Supply, Sewerage
Refuse Disposal, Incineration
Industrial Developments

151 W. Merrick Rd., Freeport, N. Y.

The J. G. White Engineering Corporation

Design — Construction
Reports — Appraisals

80 Broad Street, New York

Keis & Holroyd

Consulting Engineers

Formerly Solomon & Keis
Since 1906

Water Supply, Sewage Disposal, Garbage & Refuse Incineration, Industrial buildings.

Troy, N. Y. Ft. Lauderdale, Fla.

Capitol Engineering Corporation

Engineers—Constructors—Management

Bridges	Dams
Planning	Airports
Sewage Systems	Water Works
Design and Surveys	Roads & Streets

Executive Offices, Dillsburg, Penna.

Gannett Fleming Corddry & Carpenter, Inc.

ENGINEERS

Dams, Water Works, Sewage, Industrial Wastes & Garbage Disposal, Highways, Bridges & Airports, Traffic & Parking — Appraisals, Investigations & Reports.

Harrisburg, Penna.

Branch Offices

Pittsburgh, Pa. Philadelphia, Pa.
Daytona Beach, Fla., Pleasantville, N. J.

Modjeski and Masters

Consulting Engineers

Design, Supervision, Reports, Inspection and Investigations, of Bridges, Structures, and Foundations.

State Street Bldg. 33rd and Arch Sts.
Harrisburg, Pa. Philadelphia 4, Pa.

Aero Service Corporation

Photogrammetric Engineers

Aerial Topographic Maps
Precise Photo Mosaics
Plastic Relief Models

236 E. Courtland St.
Philadelphia 20, Pa.

Albright & Friel Inc.

Consulting Engineers

Water, Sewage and Industrial Wastes Problems, Refuse Incinerators, Highways, Bridges and Airports, Dams, Flood Control, Industrial Buildings, City Planning, Reports, Appraisals and Rates, Laboratory.
121 So. Broad Street Phila. 7, Penna.

Day & Zimmermann, Inc.

Engineers

Designs, Construction, Valuations
Reports and Management
Public Utilities and Industrials

New York Philadelphia Chicago

Fridy-Gauker—Truscott & Fridy

Architects & Engineers

Water, Sewer, Waste Disposal, Roads, Airports, Power & Lighting, Petroleum Facilities, Hospitals, Schools, Public & Industrial Buildings. Reports, Plans, Supervision, Appraisals.
1321 Arch St. Philadelphia 7, Pa.

Justin & Courtney

Consulting Engineers

Joel B. Justin - Neville C. Courtney
Dams and Power Problems, Hydroelectric, River Basin Developments, Water Supply, Foundations

121 South Broad Street
Philadelphia 7, Pa.

Yule, Sticklen, Jordan & McNee

ENGINEERS

(Formerly General Industries Engineering Company)
Bridges, Highways, Airports
Design, Investigations, Reports
Supervision of Construction
Civil, Structural, Mechanical & Electrical

309 South Broad St. 23rd & Market Sts.
Philadelphia 7, Pa. Camp Hill, Pa.

Hunting, Larsen & Dunnells, *Engineers*

Industrial Plants—Warehouses, Office and Commercial Buildings, Steel and Reinforced Concrete. Design and Supervision. Reports.

1150 Century Bldg., Pittsburgh, Pa.

Morris Knowles Inc.

Engineers

Water Supply and Purification Sewerage and Sewage Disposal, Valuations, Laboratory, City Planning.

Pittsburgh, Pa.

Peter F. Loftus Corporation

Design and Consulting Engineers

Electrical • Mechanical • Structural
Civil • Thermodynamic • Architectural

First National Bank Building
Pittsburgh 22, Pennsylvania

Gilbert Associates, Inc.

Engineers • Consultants • Constructors

607 Washington St., Reading, Pa.

Engineering • Construction Supervision
Sanitary • Power • Water • Sewerage
Industrial Relations • Rate-Research

New York • Philadelphia • Washington

Michael Baker, Jr., Inc.

Consulting Engineers, Civil Engineers, Planners & Surveyors; Airports & Highway Design; Water Works & Sewerage Design & Operation; Aerial Topo Maps; Surveys; Reports & Investigations; Irrigation. Home Off.—Rochester, Pa. Br. Off.: Jackson, Miss.; Harrisburg, Pa.; College Park, Md.

Weigle Engineering Co.

CIVIL ENGINEERS

William E. Weigle Donald K. Weigle
Sewers, Bridges, Municipal Work
Design and Construction Supervision
Estimates and Flood Control

39 N. Duke St., York, Pa.

SOUTH

Ewin Engineering Corporation

Designers of Port Facilities, Foundations, Industrial Plants, Bridges, Highways, Sewage Disposal and Municipal Projects.
P O Box 361, Mobile, Alabama
Tallahassee, Fla. Washington, D. C.

Palmer and Baker, Inc.

Consulting Engineers - Architects

Surveys-Reports-Design-Supervision Consultation

Transportation and Traffic Problems
Tunnels-Bridges-Highways-Airports
Industrial Buildings
Waterfront and Harbor Structures
Graving and Floating Dry Docks
Complete Soils, Materials and Chemical Laboratories

Mobile, Ala. New Orleans, La.
Harvey, La.

Polk, Powell and Hendon

Consulting and Designing Engineers

Municipal and Industrial Works, Investigations and Reports
621 Stallings Building,
Birmingham 3, Alabama

James and Baxter Associates, Inc.

Architects & Engineers

A complete professional service
Architectural, Civil, Industrial, Municipal

2962-64 Coral Way Miami 34, Fla.

Rader Engineering Co.

Water Works, Sewers, Refuse Disposal, Ports, Harbors, Flood Control, Bridges, Tunnels, Highways, Airports, Traffic, Foundations, Buildings, Reports, Investigations, Consultations.

111 N.E. 2nd Ave., Miami 32, Florida

Duval Engineering & Contracting Co.

General Contractors

FOUNDATION BORINGS
For Engineers and Architects.

Jacksonville, Florida

John J. Harte Co.

Engineers • Architects

Water • Sewer • Gas • Highways
Airports • Chemical Process • Industrial
Power • Aerial & Ground Surveys

284 Techwood Dr., Atlanta, Ga.
New York • Washington • Foreign

Law-Barrow-Agee Laboratories, Inc.

Soils Engineers & Consultants

Soil Testing—Soil Boring—Rock Drilling—Load Testing—Field Control—Engineering Studies—Chemical Analysis—Physical Testing

Box 1558 Atlanta 1, Ga.
Serving the entire South

Patchen and Zimmerman Engineers

Bridges, Expressways, Dams, Hydro and Steam Power, Chemical, Process and Industrial Plants, Water Supply and Sewage Treatment, Investigations, Reports, Design, Supervision.
Augusta, Georgia Atlanta, Georgia

Eustis Engineering Company

FOUNDATION AND SOIL MECHANICS INVESTIGATIONS

Soil Borings *Laboratory Tests*
Foundation Analyses *Reports*

3635 Airline Highway
New Orleans 20, La.

Schmidt Engineering Co.

Consulting Engineers

Investigations, Reports, Designs, Supervision Heavy Construction—Dams and Hydroelectric Projects—Foundation Explorations and Treatment—Water and Sewerage Works—Bridges & Highways
817 Broad St. Chattanooga 2, Tenn.

MIDDLE WEST

Alvord, Burdick & Howson

CONSULTING ENGINEERS

Water Works	Sewerage
Water Purification	Sewage Treatment
Flood Relief	Power Generation
Drainage	Appraisals

20 North Wacker Drive, Chicago

Consult these Specialists:

Let them save your time by bringing their broad experience in their specialty to bear on your problems.

PROFESSIONAL SERVICES

Cards arranged by areas, states, cities, names

Additional cards on preceding pages

A. J. Boynton & Co.

ENGINEERS

Fixed and Movable Bridges
Structures
Foundations

Design
Construction

109 N. Wabash Ave., Chicago 2.

Ralph H. Burke, Inc.

CONSULTING ENGINEERS

Complete Architectural
and Engineering Services
Plans, Supervision, and Reports

Expressways - Grade Separations
Traffic Studies - Parking Structures
Underground Garages - Shore Protection
Parks - Field Houses - Municipal Works
Airports and Air Terminal Buildings
20 North Wacker Drive, Chicago 6, Ill.

Consoer, Townsend & Associates

Water Supply, Sewerage, Flood Control & Drainage, Bridges, Express Highways, Paving, Power Plants, Appraisals, Reports, Traffic Studies, Airports, Gas & Electric Transmission Lines.
351 East Ohio St., Chicago 11, Illinois

De Leuw, Cather & Company

CONSULTING ENGINEERS

Transportation, Public Transit and Traffic Problems

Industrial Plants — Grade Separations
Railroads — Expressways
Subways — Tunnels
Power Plants — Municipal Works

150 North Wacker Drive
Chicago 6, Ill.

79 McAllister Street
San Francisco 2, Calif.

Greeley and Hansen

Engineers

Water Supply, Water Purification
Sewerage, Sewage Treatment
Flood Control, Drainage, Refuse Disposal
220 S. State Street, Chicago 4

Harza Engineering Co.

Consulting Engineers
Calvin V. Davis — E. Montford Fucik
Richard D. Harza
Hydroelectric Plants and Dams
Transmission Lines
Flood Control, Irrigation
River Basin Development
400 West Madison Street — Chicago 6

Hazelet & Erdal

CONSULTING ENGINEERS

Fixed Bridges, Movable Bridges, Industrial Plants, Expressways, Airports, Dams
Monadnock Block, Chicago 4, Ill.
Dixie Terminal Bldg., Cincinnati 2, O.
Commerce Bldg., Louisville 2, Ky.

Pioneer Service & Engineering Co.

Consulting and Design Engineers
Operations - - - Purchasing
Steam - - Hydraulic - - Gas
Public Utilities - - Industrials
231 So. La Salle St. — Chicago 4

Sargent & Lundy

ENGINEERS

Steam and Electric Plants
Utilities—Industrials
Studies—Reports—Design
Supervision
Chicago

Chas. W. Cole & Son

Engineers - Architects

Sewerage, Water Supply, Bridges, Highways, Toll Roads, Industrial, Municipal and Commercial Buildings
220 W. LaSalle Ave., Central 4-0127
South Bend, Indiana

Testing Service Corporation

Testing Engineers - Engineering Geologists
Foundation Investigations—Laboratory analyses and Evaluation of Construction Materials—Soil Mechanics, Concrete and Asphalt Technology, Field Inspection and Consultation. Special Investigations for Dams, Turnpikes, Airports.
710 N. Brookfield, South Bend 28, Ind.

The H. C. Nutting Co.

Engineers — *Chemists*
Investigations - Reports
Inspection - Testing
Soils - Foundations - Building Materials
Water — Sewage
4120 Airport Rd. — Cincinnati 26, O.
2145 N. W. 2nd Ave. — Miami 37, Fla.

The Austin Company

Design and Construction

Manufacturing and Process Plants
Airports & Air Transport Buildings
Railroad Terminals and Facilities
Power Plants — Industrial & Institutional
Industrial Office Buildings and Laboratories
Reports and Plant Location Surveys

New York — CLEVELAND — Los Angeles
Chicago — Houston — Oakland
Detroit — Seattle

Havens and Emerson

W. L. Havens — C. A. Emerson
A. A. Burger — F. C. Tolles — F. W. Jones
H. H. Moseley — J. W. Avery
E. S. Ordway — F. S. Palocsay
Consulting Engineers
Water, Sewerage, Garbage, Industrial Wastes, Valuations — Laboratories
Leader Bldg. — Woolworth Bldg.
Cleveland 14 — New York 7

The Osborn Engineering Co.

DESIGNING-CONSULTING

Industrial Plants — Office Buildings
Stadiums — Grand Stands — Field Houses
Bridges — Garages — Laboratories

7016 Euclid Ave. — Cleveland 3, Ohio

Jones, Henry & Williams

Consulting Sanitary Engineers

Water Works, Sewerage & Treatment
Waste Disposal
Security Building — Toledo 4, Ohio

Toledo Testing Laboratory

Engineers—Chemists

Concrete — Soils — Asphalt
Inspection — Research
Tests — Development
Foundation Investigation
Borings — Diamond Drilling — Load Tests
Soils Mechanics Laboratory

1810 North 12th St. — Toledo 2, Ohio

WEST OF MISSISSIPPI

Heron Engineering Co.

Consulting Engineers

For all types of Aerial Tramways, Cableways, and Suspended Structures
2000 South Acoma St.
Denver 19, Colorado

Stanley Engineering Company

Consulting Engineers

327 S. LaSalle Street Hershey Building
Chicago 4, Illinois — Muscatine, Iowa

CHECK this section whenever you need professional advice.

Black & Veatch

Consulting Engineers

Water - Sewage - Electricity - Industry
Reports, Design, Supervision of Construction, Investigations, Valuation and Rates.

4706 Broadway, Kansas City 2, Mo.

Burns & McDonnell

Consulting and Designing Engineers

P. O. Box 7088, Kansas City 2, Mo.
1404 E. 9th St., Cleveland 14, Ohio

Harrington & Cortelyou

Consulting Engineers
Frank M. Cortelyou
E. M. Newman — F. M. Cortelyou, Jr.
Movable and Fixed Bridges of All Types, Foundations, and Related Structures.
1004 Baltimore — Kansas City 6, Mo.

Russell and Axon

Consulting Engineers
Civil — Sanitary — Structural
Industrial — Electrical
Rate Investigations
408 Olive St. — St. Louis 2, Mo.
Municipal Airport, Daytona Beach, Fla.

Sverdrup & Parcel, Inc.

Consulting Engineers

Bridges, Structures and Reports, Industrial and Power Plant Engineering.
Syndicate Trust Bldg., St. Louis 1, Mo.
220 Bush St., San Francisco 4, Calif.

Benham Engineering Co.

Established in 1909

Design and Construction Engineering Services for Water and Sewage—Highways and Structures—Airports—Power and Heating Plants
215 N E 23rd Street
Oklahoma City 5, Oklahoma

Lockwood & Andrews

Consulting Engineers

Airports, Paving, Industrial Plants, Drainage & Sewerage, Site Locations, Soils & Foundations, Water Supply, Structures, Harbor Works, Valuations, Reports — Design — Supervision
Union Nat'l Bank Bldg. Houston, Tex.

National Soil Services

Consulting Engineers

Soils, Foundations, Ground-water
Ralph F. Reuss — Ray E. Hurst
Soil Borings — Laboratory Tests
Foundation Analyses and Reports
Groundwater Exploration and Evaluation
M & M Building — Houston, Texas

FAR WEST

International Engineering Company, Inc.

ENGINEERS

Investigations - Reports - Design
Procurement - Field Engineering
Domestic and Foreign

74 New Montgomery St.
San Francisco 5, California

FOREIGN

The Foundation Engineering Company of Puerto Rico

Consulting Engineers

Foundation and Soil Mechanics Investigations, Laboratory analyses, reports and recommendations, design of structures, Supervision.
P. O. Box 821, San Juan, Puerto Rico

Pan American Engineering Co., S.A.

Consulting Engineers, Project Managers
Investigations & reports—Industrial & traffic surveys—Structural, highway, airport & marine design.
Marina No. 61 Habana, Cuba
Box 1117, Port-au-Prince, Haiti

DREDGING

Frank Hefling

Air Lift Suction Dredging Cuts Costs.
Cofferdams. Aerate sewage movements Dredges solids pipe size. No priming. No loading. No pump impellers, Ck. valves, cutter heads. Efficient in deep water, digs under waiers, highly mobile.
P. O. Box 60 Chicago 90; Ph. ES-5-7010

INSPECTION & TEST

Robert W. Hunt Company

Inspection and Testing of Engineering Materials & Equipment

New York • Chicago • San Francisco and other Principal Cities

Johnson Soils Engineering Laboratory

Foundation Design - Highway & Airport Pavements - Construction Control - Load Tests - Shear & Consolidation Tests - MOBILE LABORATORIES
193 West Shore Ave., Bogota, N. J.
Bogota-Hubbard 7-4408

Engineering Testing Laboratory, Inc.

Foundation and Soil Mechanics Investigations
Soil Borings — Laboratory Tests
Foundation Analyses — Reports
3313 Main St. — Houston, Texas

CONSULTANTS

Three channels for new business are open to you: first, through your personal acquaintance among influential men in your field of specialization; second, recommendation as a result of services performed, and third, through this PROFESSIONAL SERVICES SECTION

Rates and information

Two Card Sizes Available:

Small unit ¾" by 1¾"

Large unit 1½" by 1¾"

Rates are per quarter:

Published	6 Months per qtr	12 Months per qtr
Weekly		
Small Unit	126.00	117.25
Large Unit	203.40	198.00
Bi-Weekly		
Small Unit	72.00	63.00
Large Unit	117.35	108.00

ENGINEERING NEWS-RECORD
Classified Adv. Division
330 West 42nd St.
N. Y. 36, N. Y.

ADVERTISERS IN THIS ISSUE

Adams Mfg. Div.
LeTourneau-Westinghouse Co. 4
Albina Eng. & Mach. Works 66
Allis-Chalmers Mfg. Co. (Tractors) 1
Aluminum Co. of America 39
Amer. Bridge Div., U. S. Steel Corp. 37
Armco Drainage & Metal Prod., Inc. .. 18
Austin-Western Co. 10, 11
Automotive & Aircraft Div.,
Amer. Chain & Cable Co. 60

Barber-Greene Co. 78
Bethlehem Steel Co. 47, 63
Butler Bin Co. 52

Chain Belt Co. 13
Chicago Bridge & Iron Co. .....2nd Cover
Chrysler Corp., Ind. Eng. Div. 77
Cole Mfg. Co., R. D. 95

Detroit Diesel Eng. Div., G.M.C. 14, 15
Dixie Cup Co. 75
Dodge Div., Chrysler Corp. 65
Dravo Corp. 44, 78

Earle Gear & Mach. Co. 72
Eastman Kodak Co. 56
Enjay Co., Inc. .....3rd Cover
Euclid Div., G.M.C. 30, 31

Flintkote Co., The 8

Gahagan Const. Corp. 64
Garrett Corp. 66
Griffin Wellpoint Corp. 57
Gunite Concr. & Const. Co. 74
Gunite Const. Corp. 64

Heltzel Steel Form & Iron Co. 59
Homelite Corp. 61
Hyatt Bearings Div., G.M.C. 71

Joy Mfg. Co. 51

Kerrigan Iron Works, Inc. 55
Kinnear Mfg. Co. 74

Lamson & Sessions Co. 79
Larsen Prod. Corp. 95
Layne & Bowler, Inc. 73
Layne & Bowler Pump Co. 12
Link Belt Speeder Corp. 20
Lock Joint Pipe Co. 16
Lycoming Div., Avco Mfg. Corp. 5, 6 7

Mall Tool Co. 29
McCloskey Co. of Pittsburgh 50
McKiernan-Terry Corp. 64
McKinney Drilling Co. 64
Miller Electric Mfg. Co. 82

National Clay Pipe Mfrs., Inc. 43
National Tube Div., U. S. Steel Corp. .. 69

Pressure Concrete Co. 72

Ramset Fasteners, Inc. 32
Republic Steel Corp. 48, 49
Robertson Co., H. H. 33

Sauerman Bros., Inc. 67
Sprague & Henwood, Inc. 74
Staedtler Inc., J. S. 2

Taller & Cooper, Inc. 81
Tectum Div., Alliance Mfg. Co. 54
Timken Roller Bearing Co. .....4th Cover
Tousey Varnish Co. 28

Universal Form Clamp Co. 40
Universal Mfg. Co. 58

Visking Corp. 3

Webrib Steel Corp. 82
Wickwire Spencer Steel Div.,
Colorado Fuel & Iron Corp. 9
Wooldridge Mfg. Div., Cont'l.
Copper & Steel Ind., Inc. 53

Professional Services.....92, 93, 94

SEARCHLIGHT SECTION
(Classified Advertising)
T. J. Eberle, Ass't. Mgr.

Employment 85-88
Educational 88
Notices
Proposals 82-85
Equipment
(For Rent, Sales, Wanted)....88-91

ENGINEERING NEWS-RECORD
330 West 42 St., New York 36—LOngacre 4-3000

ABP Member ABC

Number of copies of this issue printed 67,627

D. S. Robertson, Advertising Manager
Howard T. Olsen, Business Manager

ADVERTISING REPRESENTATIVES
New York, 36—330 W. 42 St.,
M. J. Storz, C. D. Neulen
S. Kennedy
Chicago, 11—520 No. Michigan Ave.,
L. H. Hunt, W. G. Payne
San Francisco, 4—68 Post St.,
R. C. Alcorn
Philadelphia, 3—17th and Sansome Sts.,
A. B. Cozzens, D. G. Jensen
Cleveland, 15—Hanna Bldg.,
E. E. Duff, Jr., F. P. DiToro
Detroit, 28—Penobscot Bldg.,
J. A. Houghton
St. Louis, 8—Continental Bldg.,
B. F. Horn
Los Angeles, 17—1111 Wilshire Blvd.,
H. L. Keeler
Atlanta, 3—Rhodes-Haverty Bldg.,
W. D. Lanier
Dallas, 1—First National Bank Bldg.,
J. H. Cash
OTHER SALES OFFICES:
Pittsburgh, 22—919 Oliver Bldg.,
Boston, 16—350 Park Square Bldg.,
London, McGraw-Hill House

EASY, PROVEN WAY to PERMANENTLY BOND CONCRETE TO CONCRETE

WELD-CRETE®

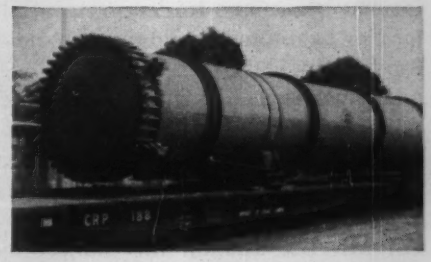
Weld-Crete is the amazing liquid bonding agent which enables you to *permanently* bond new concrete *directly* to old concrete . . . or to most any other structurally sound surface . . . *without need for costly, time-consuming chipping, drilling, roughening, acid washing or scarifying of concrete base.*

Weld-Crete has equal bonding permanence all climates, all surfaces, all sorts of conditions. When used with quick setting cement topping you can lay new floors, ramps, driveways, etc. one day and run heavy truck traffic over them the next. Get facts from your building materials supply dealer or write Larsen Products Corp., Box 5756-I, Bethesda, Md.

TYPICAL **WELD-CRETE** APPLICATION

National Brick Co., Terra Cotta, D.C.

Here Weld-Crete was used to bond new ¾" concrete topping directly to old, badly chipped and spalled floor slab which had been subjected to ceaseless heavy truck traffic. Plant shut-down time eliminated as Weld-Crete enabled National's own mechanics to do job over week end.



TIMBER-TREATING CYLINDERS

● Whatever your needs in pressure vessels—creosoting cylinders, bubble towers, gas scrubbers, pressure spheres, gas storage tanks, etc. —you can depend on COLE for vessels that are *correct* in design and permanently leakproof at the welded or riveted joints.

We also design and fabricate elevated tanks, acid tanks, dye-vats, digestors, standpipes, storage tanks, etc. Write for latest COLE catalog —*Tank Talk.*

Established 1854

R. D. COLE Manufacturing Co., Newnan, Ga.

• TANKS
• TOWERS
• CYLINDERS
• VESSELS
• STANDPIPES

EDITORIALS

Heliports for Cities

How soon must cities begin to plan specifically for the construction of heliports? F. B. Lee, Administrator of Civil Aeronautics, recommends immediate steps by municipal planners to obtain "at least an option on ample space for heliport." Within 10 years he foresees 286 daily helicopter movements carrying 1,500,000 passengers a year between New York and Washington. For the country as a whole, he predicts that 133 million passengers a year will seek to use helicopters or other "rotorcraft" for intercity trips of 150 to 700 miles, which he appears to consider to be the chief field of usefulness for aircraft of that general type.

There can be no doubt about the rapidity with which aircraft that can land and take off vertically are being developed. Only a few weeks ago, a "convertiplane" made a successful flight, using a horizontal rotor to rise and then converting to use of vertical propellers for its horizontal travel. Jets also are being used for vertical aircraft movements.

Despite this progress, the prospects for a significant number of commercial helicopter flights within the next few years do not appear bright. Practically all research in that field is for military service, and the armed forces are taking nearly all the vertical-movement aircraft that are being built. In addition, little or nothing has been done to develop controls for instrument landing by rotorcraft, and there are no operators licensed for instrument flight.

Against that background, Mr. Lee's proposal that municipal authorities begin taking options on land in "downtown" areas for heliports seems premature. Furthermore he has not even told planners how much land is required to provide "ample space for a heliport." All Mr. Lee said on this subject is "no one would dream of providing space for only one takeoff and touchdown pad at a major heliport, or of omitting facilities for parking rotorcraft." If there are to be 286 daily helicopter movements in and out of New York or Washington on the New York-Washington run alone, the space needed for takeoff and touchdown pads and for parking and servicing rotorcrafts between flights would appear to be so large as to make the cost of heliports in downtown New York or Washington prohibitive.

It has been suggested that the roofs of parking garages in downtown areas of our big cities would provide ideal sites for heliports. The idea is intriguing. Yet for the volume of helicopter traffic the Civil Aeronautics Authority is thinking about, no downtown garage that we know about in any large city would provide nearly enough area. In New York, for example, even the roof of New York's great bus terminal, occupying an entire city block 200x800 ft, would appear to be inadequate for the New York-Washington traffic of roughly one helicopter every five minutes, to say nothing of accommodating helicopters coming and going to Boston, Hartford, Montreal, Buffalo and Pittsburgh.

In the present stage of rotorcraft development, prospects for heliports in the downtown districts of our big cities do not appear bright enough to justify taking options on sites for them. But since use of vertical-rising aircraft for civilian travel is not very distant, cities will find it worthwhile at least to start planning now for future heliports. This is the time to determine the approximate size and nature of sites that will be needed and to choose good locations. If minimum size appears to preclude use of sites in downtown areas, the adjoining areas should be explored. Perhaps some of the land that should be cleared in future slum-clearance projects might be earmarked for heliports.

In summary, cities should plan for possible future heliports, but the planning should be realistic.

Construction Aids the Colleges

Lehigh Portland Cement Co. is to be congratulated for its announced plan to match its employees' gifts to U. S. colleges (ENR June 9, p.30). This commendable policy resembles a plan the General Electric Co. already has in operation. Many firms contribute to the support of our colleges through various plans of different types, but GE and Lehigh appear to be the first with plans to stimulate giving by individuals.

Lehigh's announcement ought to stimulate the generosity of more than just its own employees. By its example, it could be expected to promote giving by many other firms that are so completely a part of the construction industry but who, heretofore, have given no thought to having a part in this important undertaking. Like most other people in this country, the officers of such companies have looked to the big manufacturing companies for aid to the colleges through large gifts, not realizing that because of the great number of smaller companies, the aggregate of their many small gifts could surpass the total of the large gifts of big companies if enough of them contribute.

When those officers come to realize that the construction industry is larger than the manufacturing industry, the responsibility of the individual elements of the construction industry for the success of the college-aid program will become apparent to them. However, this responsibility does not rest alone on suppliers of construction materials or makers of construction equipment; it rests also on construction contractors, on firms of architects and engineers, and finally on the individuals.

The construction industry draws heavily on the engineering schools for new blood. It will not be fulfilling its responsibility for maintenance of an adequate supply of young engineers until its annual giving to the colleges has penetrated to the grass roots.

ENJAY BUTYL outstanding for...

AUTOMOBILE
AXLE BUMPERS, TOPS,
WINDOW SEALS, HOSE

HIGH VOLTAGE
POWER CABLE
INSULATION

LONG-WEARING
AGE-RESISTANT
TRACTOR TIRES

THE PRODUCT
YOU
MANUFACTURE

?

ENJAY
BUTYL

Enjay Butyl resists heat and cold . . . won't chip or crack . . . resists chemicals . . . retains flexibility and resilience . . . resists the aging effect of sunlight and ozone . . . is impermeable to air and other gases. Enjay Butyl is the only type of rubber, natural or synthetic, that offers this combination of advantages—and at low cost. That's why Enjay Butyl is being selected as the best rubber for more and more industrial products.

To find out how Enjay Butyl can improve your product, contact the Enjay Company. Our technical representatives and laboratories are at your service.

ENJAY COMPANY, INC., 15 West 51st Street, New York 19, N. Y.
District Office: 11 South Portage Path, Akron 3, Ohio

Western Contractors Corp. cuts drilling costs on $10 Million turnpike contract with TIMKEN® multi-use bits

LOCATION: Sections 13-14, Ohio Turnpike.

OPERATING CONDITIONS: Drilling berm in shale and sandstone.

SECTIONS 13 and 14 of the Ohio Turnpike, in the vicinity of Hudson, is being worked by Western Contracting Corp., of Sioux City, Iowa. At one highway intersection there are about 1,000,000 cubic yards of rock to excavate from an open cut 80 to 90 feet deep. For drilling berm they are using two wagon drills; two more will be added later.

Since the ground is shale and sandstone, Western Contracting found Timken® *multi-use* bits the most economical. Drilling speed and bit life are high. Timken multi-use bits are usually cost-cutters in ordinary ground, when full increments of steel can be drilled—with correct and controlled reconditioning, of course!

But for hard and abrasive ground, for exceptionally deep holes, small-diameter blast holes and constant-gauge holes, Timken carbide insert bits are usually most economical. Their longer life more than compensates for their higher cost.

Both types of Timken bits, in dozens of different sizes, fit the same steel. This means that, if the ground changes, you easily and quickly switch to the type of bit that is most economical. No need to lose time hunting up different steels.

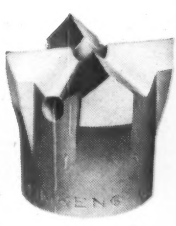
All Timken bits are made from electric furnace Timken fine alloy steel, and have the shoulder union that is designed to keep drilling impact from damaging threads.

It will be worth your while to get our recommendation on what bit to use for your present job. Write: The Timken Rock Bit Engineering Service, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

your best bet for the best bit...for every job



Timken threaded multi-use rock bit

Timken threaded carbide insert rock bit